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ABSTRACT

This student guide in agricultural marketing is designed to accompany the lessons in the curriculum unit, "Instructor's Guide in Agricultural Marketing" (CE 025 683). There are six sections in the student guide: (1) Introduction to Marketing; (2) Marketing Cash Grains; (3) Marketing Grain with a Protected Price; (4) Marketing Cash Livestock; (5) Marketing Livestock with Protected Price; and (6) Marketing Milk. Each of these sections is divided into the appropriate topics to fit the twenty lessons included in the instructor's guide. (BM)

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FOREWORD

This student reference in Agricultural Marketing is designed to be used in studying lessons in the curriculum unit, Instructor's Guide in Agricultural Marketing. It will also be of value to those interested in developing marketing programs for their individual farms and/or businesses.

There are six sections in the student reference: (1) Introduction to Marketing; (2) Marketing Cash Grains; (3) Marketing Grain with a Protected Price; (4) Marketing Cash Livestock; (5) Marketing Livestock with Protected Price, and (6) Marketing Milk. Each of these sections is divided into appropriate topics to fit the lessons in the curriculum unit, Instructor's Guide in Agricultural Marketing. You may refer to the Table of Contents for page numbers of specific topics.

Persons using this reference for individual use will want to secure the Instructor's Guide to have the price charts, work sheets, etc. necessary for a complete study of the marketing unit.

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TABLE OF CONTENTS

	Page
FOREWORD	iii
ACKNOWLEDGEMENTS	v
INTRODUCTION TO MARKETING	1
Problems in Farm Marketing	2
Marketing vs. Selling	4
Marketing Functions	5
Marketing Margin	5
Marketing Margin Example	6
Market Goals	7
Your Goals	9
Market Information	10
MARKETING CASH GRAIN	13
Kinds of Cash Markets	13
How is Price Determined?	14
Function of Price	14
Market Changes	15
How is Grain Graded?	15
Getting the Best Cash Price	17
MARKETING GRAIN - PROTECTED PRICE	19
Grain Marketing More Important	19
Determining An Asking Price	20
Should I Forward Price?	21
How to Determine Price Objective	22
Alternative Marketing Methods	23
Contract Provisions	29

Hedging versus Speculating 30
The Importance of Basis 30
Mechanics of Trading 33
Making the Hedge 34
Storage Income 35
Inverted Basis 35
MARKETING CASH LIVESTOCK 37
Markets in Missouri 37
Value of Fat Cattle 39
Pricing Cattle 40
Points in Pricing Cattle 41
Seasonal Prices 42
Selling Live Slaughter Hogs 43
Practices in Marketing Hogs 44
Seasonal Hog Prices 45
Selling Carcass Grade and Weight 45
When to Use 46
Cautions in Selling 46
Weight to Sell Feeder Cattle 47
Seasonal Price Cycles 47
Feeder Pig Markets 50
Formula Pricing Pigs 50
Marketing Practices for Pigs 51
MARKETING LIVESTOCK - PROTECTED PRICE 53
Contract Production 53
Forward Contracting 54

How a Forward Contract Works 55
Advantages and Disadvantages of Contracting 55
Using Futures Markets 56
Hedging vs. Speculating 57
Hedging Livestock Transaction 57
Market Up-Down 59
Margin Money 59
Basis 60
Setting Your Price Objective 60
Who Should Use Protection? 62

MARKETING - PRICING MILK

Brief History of Milk Marketing 63
Public Health Regulations 64
Kinds of Milk Markets 64
Effect of Classes of Milk 65
How is Price Determined? 65
M-W Price Series 66
Marketing Orders and Pricing 66
Blend Price 67
Differentials 67
Effect of Supply: Demand 67
Deciding on a Market 68

INTRODUCTION TO MARKETING

Introduction

Agriculture has changed considerably since our nation was founded over two hundred years ago.

At the time of George Washington, most of the nation was made up of people who lived on farms. Farms were nearly self-sufficient. They slaughtered their own meat; they made their own butter. Gardens and orchards were part of the farm. It was not until around a century ago that agriculture started moving toward the system of farming we know today.

In those days, even horsepower took a different form than it does today. It was horsepower for plowing the field that came in the form of an actual horse. Today, the tractor provides horsepower for the farm.

Then oat fields provided fuel for the horsepower. Today the oil field provides fuel for the horsepower in the tractor and truck motor.

As the new nation had a relative abundance of land, families tried to stretch their muscle power and management over as many acres as they could manage. Land was relatively low in price. It was labor that was limited. People sought ways in which they might develop machines to help them farm. Families moved westward from the east coast. There was the need to find better ways to plow, to plant and to harvest crops from the farm.

McCormick developed a machine known as the reaper. It made the cutting of ripe wheat and other small grain more simple. Early in the 1800's John Deere improved the plow to cut more effectively through the stems and root systems of the heavy crop of century-old grasses growing in the prairie lands of Illinois and across the middle west. Around the turn of the century, Iowa farm boys adapted a motor to wheels and a tractor was created.

As the farm developed home-made gadgets to help with the plowing, planting and harvesting, there was the need for people to devote their time to producing these new machines for the farms. Blacksmiths who worked with horseshoes began to build farm machines for the horsepowered-tractor.

Farmers became busy with the field work of plowing and planting. Farmers found they could make more profit by using machines, fuel, chemicals, etc., manufactured in cities and increasing their output rather than keeping the farm self-sufficient. Thus, they turned to the towns and mainstreet stores of their communities to buy more of the machines and other supplies they formerly produced on their own farms. Store-bought clothes began to replace the hand-sown shirts in the same manner that the new machinery replaced the horse.

One can say that in the past one hundred years, the farms of this nation have become more specialized in what they produce. It has reached such a stage of specialization that today most farmers buy clothing, household equipment and appliances; even foods are bought from the store instead of producing them all on the farm in the smokehouse, orchard, garden and milk barn.

In addition to specialization occurring off the farm, most farms are becoming specialized. There are farms that specialize in feeding beef cattle and raising calves; there are farms that produce chiefly pork, poultry, or milk.

Problems in Farm Marketing

Specialization in agriculture leaves the farmer subject to wide shifts in income as the price for the one or two major crops or livestock produced changes at the market. A farmer needs a large, steady income to pay for all the inputs. Prices for corn or wheat or soybeans are influenced by the changes in crop conditions for these grains grown on the other continents of the world. Wheat fields in Argentina and Canada influence the income received by the wheat farmer in Kansas for his/her year's work. Soybean production and prices in Brazil influence what the farmer gets for that crop in Indiana and Alabama. In fact, supplies of oil from the palm plant in Indonesia influence the price of soybeans at the country grain elevator in Missouri. Even the anchovy fish catch in Peru affects the income for the farmer who raises soybeans.

Grain prices are not the only prices that rise and fall. Ranchers with beef cows often find they received no profit on their investment in their land and for their year's work of caring for the cows and calves. This happens when prices for calves are relatively low. The demand for beef at the food store, and the price and production levels of pork and of poultry in the form of broilers and turkeys influence what that rancher will receive for his/her crop of calves.

Still, in all fairness it must be pointed out that the farmer generally expects to cover her/his costs--at least if one considers the operation over several years. If the farmer does not cover her/his costs in this so called "long-run," the farmer cannot afford to replace her/his tractor when it wears out. She/he cannot buy seed for the next season's corn drop, or soybean or wheat crop. She/he cannot buy replacement feeder cattle. In effect, the farmer needs to cover the costs of operating the farm and also the costs of living for his/her family.

Food production is a biological process. A major reason for farm profits and losses to fluctuate widely from year to year is because of the market system the farm operates in for its crops and livestock.

Food is produced in a biological-type system. Food is not usually produced instantly in a factory that can start and stop the production of milk from steel or cement, or make pork chops from sawdust. In effect, it takes planning in advance for cows to be produced or pork chops to be available or fresh milk to reach the market on the fourth Tuesday of next month. These products need to reach the market in a fairly steady stream. People cannot live on last year's milk in the manner they may live by using last year's clothing or last year's automobile, and used textbooks in schools.

Supplies of food are difficult to always be in exact balance with the demand for food. Supplies of corn and pork and milk sometimes are larger than what can be sold in the market at a price sufficiently high to cover the costs of production and to provide a profit to the producer. Again, it must be remembered that wheat and pork come to the market when they are ready for market. If there is more wheat or pork going to the market than the market will absorb at a price that provides a profit, the farmer who produces these products generally absorbs the loss.

The relatively few firms in the meat processing sector or the small number of bakeries turning wheat into bread or pies and cakes or breakfast cereals generally can pass on their costs to the consumer.

Unlike the farmer who waits all season for the production of wheat, the breakfast cereal company can control its volume of production. Therefore, the breakfast cereal company has more control over its quantity of production and its price.

The farmer cannot influence the price of wheat in the market by cutting out production of wheat. There are too many wheat farmers in the nation and in the world that one wheat farmer cannot affect the price of wheat by cutting back on the number of acres he/she produces. In contrast, the number of bakeries that bake bread for a territory are relatively few in number. The action by one bakery, especially the larger, more dominant one, can influence the volume of bread available and have an effect on the price of the bread in that market area.

Farm products lack identity. Farmers also lack market power. A farm produces a product that is difficult to identify as being different or better; the product generally can be transported many miles; and there are many external factors that affect price. If supplies of these foods are available from an area at a lower price than from another area, the consumers will buy from the lower priced area.

Different market systems for labor, professions, etc. Other occupations are more insulated from the market than farming. Teachers and doctors serve a community; their services do not face the market forces each day and have a price put on them by the bidding public. While the shopper at the food market compares tomatoes and cabbages, the patient generally goes to the same doctor or at least chooses a doctor on a basis different than cost.

Similarly, a student does not choose a school where the teachers work more cheaply than another school. The student does not directly pay the total cost for the teacher's services, while the food shopper is expected to pay the market price of the day for the food at the store.

Similarly, accountants and lawyers, engineers and nurses are not subject to shifts in the market that occur with the weather changing in another continent overnight in the manner a wheat farmer takes a drop in price if it rains in Spain.

Marketing Vs. Selling

Marketing and selling definitions. There are many definitions of marketing. Basically, it is all the steps and processes in getting the product from the producer to the consumer. Selling might be thought of as accepting the offered price at the time of production--selling grain from the combine at the time of production would be an example.

Marketing Functions

The functions of marketing involve *assembly, transportation, processing, packaging, storage, pricing, financing, promoting, retailing* and more. Many farmers are becoming more involved in marketing as they have larger production and do their own assembly and perhaps deliver direct to a processor. They also are joining commodity groups as the Pork Producers to cooperate in promoting their product. Many are performing storage functions with on-farm grain storage and are involved in pricing through Forward Contracts, Hedging, etc.

Marketing Margin

(Marketing margin or farm-retail price spread is the difference between the retail price and farm value.) It measures the charges for the functions of marketing described above--it shows the consumer where her/his food dollar goes.

Margin changes are often caused by higher costs of input as labor, transportation, packaging, and other operating and overhead expenses of marketing firms. Wider margins may also reflect increased profits for one group, processors for example, while retailers may have lost money.

A few points are important:

1. The marketing margin has been widening primarily because of increased costs, and marketing firms are able to pass the costs on to the consumer.

2. The marketing margin varies for different products. It is wider on products requiring more processing, storage, etc.

3. The farmer's income is not necessarily related to his/her share of the consumer's food dollar. (Price times quantity minus costs equals income.)

4. The amount of processing in a product affects the marketing margin, and consumers indicate the desire for more processing.

5. Advertising, market power, etc., also affect margin.

Marketing Margin Example

How does this work in an actual example? Let's take a 1,000# steer that sells for 40 cents a pound while T-bone steak is $2.00 a pound.

Your T-bone starts out as part of a live animal--usually about a 1,000 pound steer. When the farmer sells the steer, let's say he/she gets 40 cents a pound or $400.

Then the animal goes to the packer and is dressed out to a 620 pound carcass. Not including any value added by the packer's services, the carcass is now worth 64.5 cents a pound ($400 ÷ 620#).

The carcass must be cut and packaged for retailing, however. By the time some bone and fat are removed and some moisture and meat are lost during the process, only about 440 pounds of salable meat are left. This meat now has a value of about 91 cents a pound ($400 ÷ 440).

Processing, transportation, and marketing costs also have to be figured. Add to that 91 cents per pound about 8 cents for slaughtering; 4 cents for transporation from slaughter house to retail store; another 21 cents for labor to cut the carcass into retail cuts and package it for sale; about 5 cents for packaging material; and about 2 cents for advertising.

Add on a little profit for each of the firms along the line, and you come up with a figure of about $1.40 a pound for the 440 pounds of usable meat.

But how did the T-bone get up to $2.00 a pound?

Well, that steer with which we started produced a mere 16 pounds of T-bone steak in the first place. The other 424 pounds of meat were mostly cuts that sell at lower prices than T-bone. Chuck steaks and roasts, ground beef, shanks, short ribs, and stew meat are good examples. The retailer has to price each product so it is all sold at about the same time. Otherwise, T-bones might all be gone, and there will be a large supply of stew meat.

If you average out all the hamburger at let's say 84 cents a pound, the T-bone at $2.00 a pound, and all other cuts at various prices, you come out with $1.40 a pound. Consumers at the same price would eat more steak than hamburger. Steak is more scarce than hamburger; therefore, its price is higher because consumers will pay more.

That's why the price the farmer receives per pound of live animal is so far from the price the consumer pays for meat in the supermarket. But then again, the conveniently packaged, ready-to-cook cuts of meat you buy in the supermarket are a far cry from that 1,000 pound live animal.

Market Goals

A complete list of the desires of farmers, agribusiness firms, and consumers for agricultural marketing policy alternatives is not possible. Fortunately, neither is it necessary for the task at hand. Rather, a statement of some expectations gives a useful check list as various marketing options are discussed later.

A farmer generally desires a system that:

a. treats all producers equitably, that is, a system of pricing and market access based upon the products' market performance rather than the personal attitudes of the buyer or contractor toward the farmer as an individual.

b. provides adequate prices in view of production costs.

c. reflects to him/her the quality-price differentials paid by consumers.

d. rewards the farmer's contribution as adequately as it rewards marketing firms for their contributions.

e. provides access to convenient market outlets.

f. provides a viable choice among competing buyers.

g. creates the ability to move to market and/or sell any amount that he/she may choose at any time.

h. provides sufficient timely and adequate market information so that he/she may obtain the best available offer at any given time.

i. provides sufficient confidence in marketing processes and institutions so that the farmer feels the system is not working against him/her or against other producers.

j. provides bargaining power equal to or, preferably, exceeding that of the procurement agency with which he/she deals.

k. gives the ability as an individual to obtain equitable treatment with other producers within the contracting or marketing or bargaining process.

Agribusiness firms expectations vary according to a company's size and complexity. Some firms, such as small family-run elevators, may be operated by individuals who share with many farmers basic concerns about entrepreneurial freedom and equity of treatment. On the other hand, much of agribusiness is larger corporations operated by professional management. Their expectations and their efforts exert strong forces upon the types of marketing options open to farmers in various market situations.

Though an agribusiness firm is also a maximizer, it may be equally concerned with growth. It aims for an adequate and, frequently, a growing stream of profits and sales.

Security of the firm is given a large premium. Managers do not like large risks. They generally resist large fluctuations in sales and profits, preferring smaller, more stable sales and income streams to larger, more variable ones. Likewise, a vertically controlled system is frequently more appealing than dependence on the uncontrolled open market.

Managers perceive the market channel as a power system. They generally believe they can maximize the security of the firm and increase their market options by actions and arrangements that increase their control through the market channel. Examples are many: development of strong brands with good consumer acceptance is a prime way for processors to increase their power and security in a market channel; vertical integration, forward and backward, generally increases a firm's power within a channel; various contractual measures to insure the continuity and stability of farm products procured may increase a processor's power within the marketing system.

The amount of agricultural products supplied constitutes the size of the current demand for the handling, processing, storage, and transportation services provided by most agribusiness. Fixed facilities and costs are ordinarily quite important; so a big crop is almost always more profitable than

a small one. On the other hand, a supply-restricting government program will likely raise returns to farmers, but reduce the demand for agribusiness services; hence, the short-term interests of farmers and agribusiness conflict.

Though several objectives of agribusiness motivate some form of vertical integration into agricultural production, there are frequently some important deterrents. The amount of risk in agricultural production is one of the most important.

Consumers expect adequate supplies of food at reasonable prices. Though an adequate supply of food in the aggregate at an overall reasonable price level is sufficient for the prevention of hunger for most of the population, what about fluctuations in the supplies and prices of individual foods? Sharply higher prices of major expenditure items such as beef or milk or baked goods are likely to cause considerable dissatisfaction. Presumably, similar "shortages" of cranberries or carrots are of relatively less concern.

How shall "reasonable price" be defined? One consumer standard for a reasonable price is what it was last year; so sudden and large price increases are very likely to be regarded as unreasonable. Another standard of reasonableness is price in relation to consumer income. A nation accustomed to spending a smaller proportion of its disposable personal income each successive year on food is likely to resist a reversal of that trend. Yet another standard of reasonableness is related to farm and agribusiness income. Nonagrarians have a considerable reservior of good will toward farmers--they do not expect to eat cheaply at the expense of reasonable incomes to farmers and farm labor.

Consumers have long shown a taste for variety, for new products, and for convenient labor-saving items; however, during the 1974-75 recession, there were drops in sales of numerous speciality and convenience items. Perhaps the message is that consumers want variety and welcome the opportunity to try new items, but they expect value commensurate with cost.

Your Goals

What are your goals from these marketing lessons? Some goals might be: (1) highest price, (2) maximum profit, (3) less risk, (4) more convenience or less labor, etc. *Some farmers would probably select maximum profit from the above list.* However, a young farmer with considerable borrowed

capital might select less risk. Farmers in this group may want to guarantee a price that will let them make a reasonable profit even if it means giving up larger profits some years and low profits or even a loss in some years.

Other farmers may select convenience. They are not willing to make the effort to do a better job of marketing. They prefer "taking" the current price and avoid studying, planning, and carrying out new or different activities.

Market Information

You will need sources of prices and marketing information if you are to make good decisions in marketing. Some of these sources for livestock and crops available in Missouri include:

Title	Source	Remarks
Daily Market Summary	Mo. Dept. of Agri. Box 630 Jefferson City, MO	Free. Reports livestock & grain cash & futures markets daily.
Crop & Livestock Reporter	Agri. Statistician Box L Columbia, MO	Free. Reports results of surveys as cattle on feed, pig crop report, etc. Bi-weekly.
Agricultural Outlook Letters	Agri. Economics 200 Mumford, UMC Columbia, MO	Free. Issued periodically on most commodities.
Doane's Agricultural Report	Doane's Agri Service 8900 Manchester Rd. St. Louis, MO	$24.50/yr. Outlook information plus management suggestions.

In addition to this brief listing, most farm magazines have sections devoted to prices, marketing, outlook, etc. Daily newspapers, especially from the larger cities, carry complete price reporting pages. You may want to contact the following USDA offices for a list of special reports they have available:

Crop Reporting Board, Statistical Reporting Service, USDA, Washington, D. C.
Information Division, Agricultural Marketing Service, USDA, Washington, D. C.
Economic Research Service, Information Division, USDA, Washington, D. C.
Foreign Agriculture Service, Information Division, USDA, Washington, D. C.

Credit: Marketing Alternatives for Agriculture, Cooperative Extension Service and USDA cooperating, National Public Policy Committee, New York State College, New York.

Farm Index, March 1976, USDA.

Handbook of Agricultural Charts, Handbook No. 491, USDA.

MARKETING CASH GRAIN

Introduction

These next five lessons will include several alternatives in the marketing of grain. Since farmers eventually sell their grain on a cash market, the first lesson will discuss the cash market. A farmer may have stored at harvest, hedged, etc. However, the way the farmer sells it for cash has an important influence on profits. If grain is sold direct from the combine, it also goes on the cash market.

Kinds of Cash Markets

The cash market is where you take your grain and exchange it for dollars. Some cash markets are: country elevator, sub-terminal, terminal and transformers.

Country elevator. For most grain producers, the country elevator is their cash market. It is the first tier in the marketing structure. They usually have facilities for receiving, conditioning, and storing grain. They also provide reloading for truck, rail, or barge shipment to other handlers or processors. Their function is to absorb the harvest rush and to begin the process of spreading the crop out more evenly to meet steady, year-round demand.

Their price will be based on the price they can receive for the grain minus their costs of handling, transporting, and profit. Obviously, a country elevator with a higher available selling price (as an example, a country elevator that manufactures feed or sells grain locally for feed) or lower transportation costs (barge loading facilities as an example) will be able to pay a higher price than an elevator without these advantages.

Sub-terminal elevators. They receive over half their grain from other elevators and are located away from terminal markets. Their main function is conditioning, storing, and reloading grain. Examples of these are elevators that buy over half their grain from country elevators and load on barges for export.

Terminal elevators. These are at crossroads for major transportation networks and usually can receive and ship grain by truck, rail, and barge. They usually have the capacity to fit the requirements of almost any buyer or shipper.

Transformation market. This stage in grain marketing includes feed manufacturers, processors, and exporters.

How Is Price Determined?

Since most grain is sold to country elevators, they will be used as an example. In a grain surplus area, the local price will be what the country elevator can forward price or hedge minus handling, transportation, profit and consideration of the competitor's bid. As an example, during the rush of soybean harvest, the local elevator calls a terminal elevator and finds they can forward price at $7.00 per bushel. If they figure the cost of transportation at 20¢/bu. and a handling and profit charge of 10¢/bu., they would probably bid $6.70/bu. locally. If there is a large crop and the local elevator is filling rapidly, the bid might be lowered to $6.60/bu. or $6.50/bu. and an increased margin maintained. (The local elevator could also hedge if adequate storage was available. If the local elevator forward contracted, the terminal elevator would hedge.)

The terminal would determine the $7.00 forward contract price by subtracting the "basis" from the futures price. As an example, the day it bid $7.00, Chicago futures might be $7.15--or, it would cost $.15 to deliver the soybeans to Chicago. The $7.15 futures price is determined by supply and demand.

Function of Price

Price has to be at the level that will let a large or small crop last until the next harvest, but not leave a large surplus. As an example, if a larger corn crop is raised, more will be fed to livestock (cattle put on feed at lighter weights because it is profitable when the price of grain is lower, wheat used in livestock rations, etc.) With a short crop, the price of grain will be higher; cattle will be left on pasture or roughage to heavier weights; hogs will be sold at lighter weights; etc. Many other factors enter into this adjustment process, but price rations the supply. (Prior to the 1970's, the government frequently had a "support price" on grain which created an artifically high price with resulting "surpluses" of grain carried over to the next crop year. This is probably reoccuring in the late '70's.)

The $7.15 futures price used in the above example is really the best judgment of all the people in the trade as to what price is necessary to achieve the pricing function. If price is too low in the judgment of people in the trade, speculators and others will buy futures contracts--if too high, they will sell.

Market Changes

The market fluctuates as a result of the following market change. The first change is in the supply of the grain or a competing product. As an example, a large wheat crop that brought the price to a "feeding" level could cause the corn market to drop. Or, a large soybean crop in Brazil could cause the soybean price in the United States to drop. The second change is in the demand (more hogs fed, more cattle on feed or increased exports). The third is imperfect information (the reports of the amount of grain or livestock on hand or being sold, etc., were not accurate). The fourth is farmer adjustments. Farmers learn of a large corn crop, so they place more cattle on feed or farrow more sows. This results in an increase in demand so that the price of corn may not be as low as originally anticipated.

In summary, the cash price at a country elevator in Missouri is generally the futures price minus the basis (cost of transportation, handling, etc., to Chicago or the futures market for the nearby month). And the futures price is that price necessary to spread the use of the grain until the next harvest taking into consideration the amount removed from normal supply by storage programs, etc. This is for a certain specified grade of grain; i.e., No.2 corn, No. 1 soybeans, etc.

How Is Grain Graded?

Price will depend on the grade, moisture, and discounts for your beans. As an example, the following chart gives the specifications for USDA grades of soybeans.

GRADE REQUIREMENTS FOR SOYBEANS

Grade	Minimum test weight per bu.	MAXIMUM LIMITS OF --					
		Moisture	Splits	Damaged kernels		Foreign material	Brown, black &/or bicolored beans in yellow or green beans
				Total	Heat-damaged		
	lbs.	%	%	%	%	%	%
1	56	13.0	10	2.0	.2	1.0	1.0
2	54	14.0	20	3.0	.5	2.0	2.0
3*	52	16.0	30	5.0	1.0	3.0	5.0
4**	49	18.0	40	8.0	3.0	5.0	10.0

Sample: Sample grade shall be soybeans which do not meet the requirements for any of the the grades from No. 1 to No. 4, inclusive; or which are musty, sour, or heating; or which have any commercially objectionable foreign odor; or which contain stones; or which are otherwise of distinctly low quality.

*Soybeans which are purple mottled or stained shall be graded not higher than No. 3.

**Soybeans which are materially weathered shall be graded not higher than No. 4.

In addition, elevators will have a discount price for soybeans and other grains that vary from the No. 1 grade. An example of one schedule of discounts used in 1977 is given in the chart below.

SCHEDULE OF DISCOUNTS FOR YELLOW SOYBEANS

Subject to Change Without Notice

TEST WEIGHT DISCOUNT	Per.Bu.
54# or more	. .
53.9 to 53	1¢
52.9 to 52	2¢
51.9 to 51	4¢
50.9 to 50	6¢
49.9 to 49	10¢
Under 49 lbs Subject Rejection or Discount on Merit	

MOISTURE DISCOUNT
1% of CONTRACT PRICE for each 1/2% of Moisture or fraction thereof over 13.0%

SPLITS DISCOUNT	Per.Bu.
20.0% or less	. .
20.1 to 25%	1/4c
25.1 to 30	1/2c
30.1 to 35	3/4c
35.1 to 40	1c
Over 40% Subject Rejection or Discount on Merit	

DAMAGE DISCOUNT	Heat Damage Per.Bu.	Other Damage Per.Bu.
.0% to .2%	. .	. .
.3 to 1.0	2c	. .
1.1 to 1.5	4c	. .
1.6 to 2.0	6c	. .
2.1 to 2.5	8c	2c
2.6 to 3.0	10c	2c
3.1 to 3.5	NOTE	4c
3.6 to 4.0		4c
4.1 to 4.5		6c
4.6 to 5.0		6c
5.1 to 5.5		8c
5.6 to 6.0		10c
6.1 to 6.5		12c
6.6 to 7.0		14c
7.1 to 7.5		16c
7.6 to 8.0		18c
NOTE Over 8% damage or 3% heat damage subject to rejection.		

FOREIGN MATERIAL: All foreign material in excess of 1% shall be deducted from the gross weight and will not be paid for.

IN ADDITION TO ALL OTHER DISCOUNTS, THESE WILL APPLY: Musty 5c, Sour 5c, Heating 5c, Hot 10c, Materially weathered 3c

SOYBEANS NOT GRADING WITHIN ABOVE LIMITS WILL BE SUBJECT TO NEGOTIATION BETWEEN BUYER AND SELLER, BUYER RESERVES THE RIGHT TO REJECT ANY SAMPLE GRADE SOYBEANS OR SOYBEANS OF DISTINCTLY LOW QUALITY.

SOYBEANS CONTAINING ANY TOXIC MATERIAL WILL BE REJECTED.

SOYBEANS CONTAINING CROTALARIA WILL BE REJECTED.

A farmer with 1,000 bu. of soybeans that had a test weight of 53# and 8% foreign material would receive $6.96 per bu. for 920 bu., (a dock of 1¢ for low test weight and 8% weight dock for foreign material).

Corn, wheat, and milo grading charts and discount schedules are on handouts in the Instructor's Guide.

Having the harvesting and storage equipment clean and set correctly are critical to getting the best grade on grain. Also, cultural practices - no garlic in wheat, as an example - are important.

APPROXIMATE DAYS CORN WILL KEEP AT
VARIOUS TEMPERATURES AND MOISTURE LEVELS*

Temperature of Air in Grain (F)	Corn Moisture Content				
	18%	20%	22%	24%	26%
75	28	12	8	5	4
70	37	16	10	7	5
65	49	21	14	9	7
60	65	28	18	12	9
55	86	36	24	16	12
50	115	48	32	21	16
45	150	64	42	28	21
40	200	85	56	38	28
35	265	112	74	49	37

*Grain Research Lab, USDA, Ames, Iowa.

Getting the Best Cash Price

Irregardless of whether you sell at harvest, store, or hedge, it is always to your advantage to obtain the best cash price when you deliver your grain. Some management techniques to be considered are:

Alternative cash markets

a. Different country elevators
b. Sub-terminal or terminal elevators and transformers and subtract the cost of shipping
c. Feed processors and/or farmer feeders
d. Your own livestock
e. As seed for sale

Improvement of quality and/or blend

a. Dry grain to avoid moisture discounts - as an example, a general method of discounting for moisture above the grade level is to reduce price (or weight) 1% for each .5% extra moisture. For corn with 20.5% moisture, the discount would be 10% (20.5 - 15.5 ÷ .5 = 10%). If the price for 15.5% corn is $2.50 per bu., the price for 20.5% corn would be $2.25 ($2.50 x .10 = $.25; $2.50 - $.25 = $2.25). Since weight is lost when grain is dried, this "cost" must be determined next. The table in the Instructor's Guide helps with this calculation. For corn with 20.5% moisture dried to 15.5%, the shrinkage is 6.42%. Multiplying this times the price of No. 2 corn ($2.50 - .0642 = .16) gives the value of the shrink or 16¢ per bushel. The return to drying would be 25¢ minus the 16¢ or 9¢. The 1977 edition of UMC Guide #302 gives a custom charge for drying of 2¢ per point. In this example, removing 5 points of moisture would cost 10¢ and the returns were 9¢ so a farmer would not dry if these were his/her costs. (A farmer that owns a drying system may find that 1/2¢ per point covers variable cost and 1¢ per point total costs. If this were the case, he/she would dry the grain.)
A note of caution here. Over-drying grain below grade requirements reduces income since less bushels will be sold. As an example, if a farmer dries the 20.5% corn to 13%, there would be a 9.12% shrink instead of 6.42% shrink when dried to 15.5%. Another way of expressing it is: 1,000 bu. of 20.5% corn is 935.8 bu. at 15.5% and 908.8 bu. at 13% or a loss of 27 bu. from this slight over-drying. Obviously, grain that will be stored, must be dried to the point where the "condition" can be maintained. Sometimes it is necessary to dry below 15.5% on corn to hold it in condition, etc.

b. Farmers with adequate facilities may "blend" grain prior to selling or sell it to a local elevator with this equipment. An example of blending is the mixing of grain that will be discounted with above quality grain so that the entire lot sells as No. 2 corn. Some local elevators perform this service for farmers indirectly by not discounting sub-standard grain as much as the terminal elevator will and by blending it with other grain before selling it to the terminal elevator.

Credit: Marketing Alternatives for Agriculture, National Public Policy Committee, New York State College, New York.

MARKETING GRAIN - PROTECTED PRICE

Introduction

The old adage that "farmers have to take whatever the buyer wants to give for their products" doesn't have to be true any more. Today's grain farmers have many marketing alternatives available to them. They can market their grain and not just sell it.

By developing an intelligent, calculated marketing plan, grain producers can assure a reasonable profit - even before they put their seed in the ground.

Grain Marketing More Important

Less government regulations. More and more, American agriculture is moving away from strict government regulations, controls and subsidies. Farmers in general - and grain producers in particular - are faced with widely fluctuating market demand.

Exports. Complicating the grain marketing situation today is our increasing dependence on foreign buyers. As an example, over 50 percent of America's soybeans are now being exported, either as raw beans or soybean products. Since foreign buyers are reacting constantly to grain supplies and prices around the world, it's difficult to predict foreign demand for American grain year to year.

Increased credit. American agriculture also has what appears to be an endless and constantly growing appetite for credit these days. It's especially easy for young farmers just getting started to extend their credit to the absolute limit. In this precarious financial environment, today's grain producers simply have too much at stake to rely on the whims of the market at harvest. And chances are their lender won't let them. Today's lender wants to see a well-thought-out marketing plan before advancing production money.

Prices fluctuate. It's becoming harder also for grain producers to rely on historical information to help them anticipate demand and prices. Seasonal price patterns and historical performance of the markets still help, but they require constant adjustment as world-wide conditions change.

Increased risk. The result of all these factors is less price certainty and more risk for grain producers. To survive and make money, producers must sharpen their understanding of the market and the marketing alternatives they might use.

When a producer plants a crop with a marketing scheme well in mind, she/he is beginning to get away from "selling" and is developing a skill in "marketing."

Determining An Asking Price

Set a marketing objective. To do a good job of marketing, a grain producer must have a marketing objective. First a decision must be made as to what crops to produce and how much of each. Then if the producer is in an extremely solid financial position and loves to gamble, he/she may want to take chances at harvest. Production could be held in storage and sold when the producer figures prices are highest. If the producer wants to store the crops and be sure of a good profit, the producer may plan to pick an opportune time and hedge the stored crops in the futures market. If there isn't storage space, the producer may want to "lock in" a profit on the growing crops by forward contracting or hedging part of the production. Whatever the objective, every grain producer should have one before the crop is planted each year. (An option for grain producers to consider in 1978 and probably future years is the government target price and loan program.)

Determine cost of production. You can't determine your anticipated profit until you first determine your production costs. But once you've figured your costs, you can decide how many acres of beans to grow relative to corn, say, and you can watch cash contract offerings and futures prices and know when to "lock in" a satisfactory price.

Obtainable price. To arrive at an "asking price" that you would be willing to accept for your soybeans, you should work through a production budget. Total all variable and fixed costs, then add some return to management and profit. Figure an asking price per bushel that you consider reasonable and profitable.

(An example of a production budget is in the Instructor's Guide.)

Should I Forward Price?

Whether or not you should forward price your grain depends on two things:

1. *Amount of risk you wish to assume.* If you are financially independent, can take risks and survive if they go against you, you may prefer to take your chances with the cash market. You simply produce or store unpriced grain. If you are set up to store your grain and watch the market, you have some added security - but you are still holding your grain for an unknown price.

Many farmers prefer to be risk averters. They are either unable because of financial commitments or unwilling because of temperament to assume the risks of adverse price changes. So they hedge their crop by locking in a desired profit with cash or futures contracts to avoid price risks.

Young farmers just starting out especially need marketing security in order to make payments on debts, have sufficient income for family expenses and capital for expanding their business.

Some producers use cash contracts or futures contracts to cover only their direct costs of production or storage. They speculate on the remainder of their crop.

2. *Your pricing objective.* If you are after the top price during the year and you want maximum flexibility to store your grain and second-guess the market, then you probably don't want to forward price your crop. But if you want to lock in an acceptable profit, have peace of mind, be sure to meet all of your financial obligations and obtain credit easier, then you probably should consider forward pricing.

The success of any particular case of forward pricing depends entirely on the objective of the producer involved. There are three basic objectives of forward pricing?

a. <u>To get a higher price than the ultimate cash market</u>. If your objective is to get the highest price by using the futures market, your chances of success are not too great. To be successful, the producer with this objective must be able to accurately forecast the cash market price that will prevail at the time of sale. In other words, she/he must be able to outguess the market. *If you are trying to get the highest price, you may hedge, but you're thinking like a speculator.*

b. To lock in an acceptable profit and avoid large price declines. If this is your objective, your odds for success are excellent. You figure your production costs, add your desired return to management and profit and then lock in your price when it is offered to you through a cash contract or the futures market.

c. To base management decisions on known prices. With this as an objective, you can use the futures market or cash contract prices to help you decide whether to plant corn, soybeans or some other crop in any particular year. You can also use it when deciding to sell grain at harvest or store for later sale. You won't be too concerned about whether or not you get the highest price using forward pricing. You will make your money from smart management decisions rather than from trying to outguess the market.

The most frequently made mistake by a grower who forward prices is not defining his/her objective before beginning or trying to change an objective somewhere along the line.

How to Determine Price Objective

Usually you consider three steps in determining your price objective.

Cost of production including a profit. A handout from your Instructor's Guide will help you to determine your cost of production. Line 15 gives costs per bushel including an estimate for your labor. It does not include a charge for interest on investment or a profit. These need to be added before determining your price objective.

What will you do if you are not able to forward price and include all of these "costs"? You have several choices: (1) substitute a crop that will show a profit, (2) remain unprotected on price and "hope" the cash market comes up, (3) forward price to avoid a larger loss, (4) forward price if you can cover variable costs and part of your fixed costs, or (5) don't grow any crops and rent the land to someone else. As the production of crops in the United States increases, there may be crops and/or years in which it is not possible to forward price at your price objective. You will need to compare the alternatives to make the best decision.

Fundamental (supply and demand). (What the price range is likely to be.) Outlook newsletters from the Agricultural Economics Department, UMC, are issued periodically and give the estimated prices based on supply and demand (fundamentals). This information should be used in connection with Step 1 to determine the price objective. As an example, if the outlook is for the market to rise, you would delay setting your price objective until more information is available. Brokers also have this type information and can frequently advise on setting the price objective.

Charts. (Use to determine a more specific price.) Many hedgers complete the two above steps and then use charts to determine a spcific price objective at which to place the hedge or forward contract. One method used by some is to wait with placing the hedge until the three day average is 10¢ over the ten day average.

Again, it is a good reminder that most farmers may want to divide their production and forward price one-third at about planting time, one-third in the middle of the growing season, and leave one-third unprotected. Others may hedge as above and then if storage is available and the basis is wide at harvest, "roll" the hedge forward to a more profitable month (forward contracting will not work with this procedure).

Alternative Marketing Methods

After you have decided your objective, the next step is to look at the alternative marketing methods. Some of these are:

Sell cash grain at harvest.

1. Advantages

    a. no storage facilties needed
    b. maintaining quality is no problem
    c. provides immediate income
    d. eliminates a possible 3 to 5 percent shrink

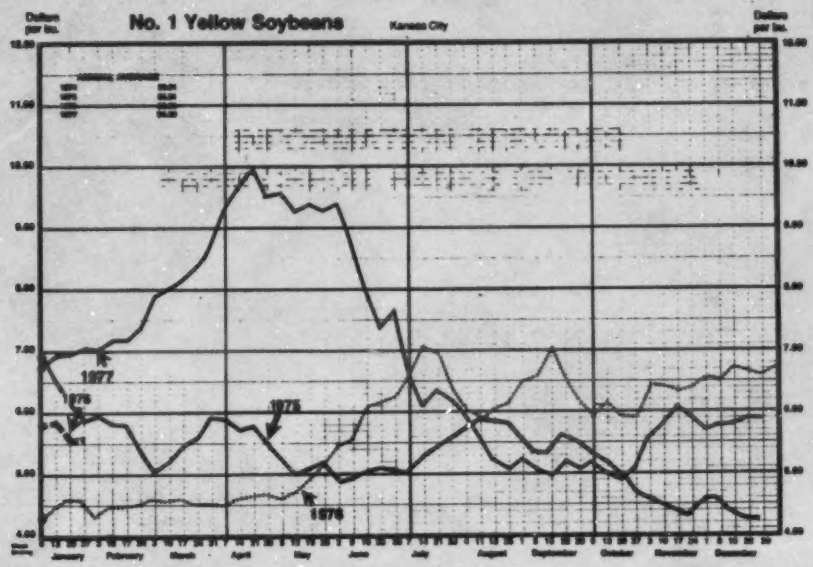
2. Disadvantages

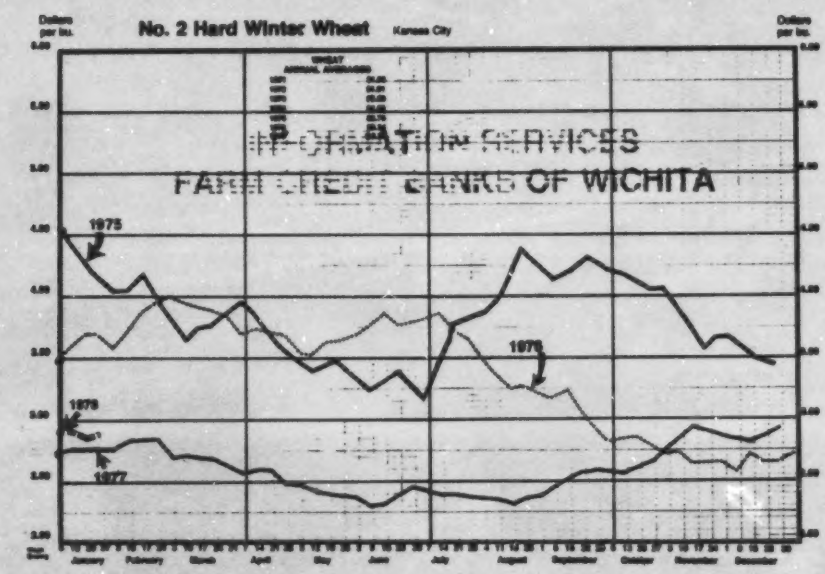
    a. usually low price of the year (only 3 years of the past 25 years was this not true for wheat)
    b. may spend time in lines at elevators - slows up harvesting
    c. lack of flexibility in adjusting income for tax purposes

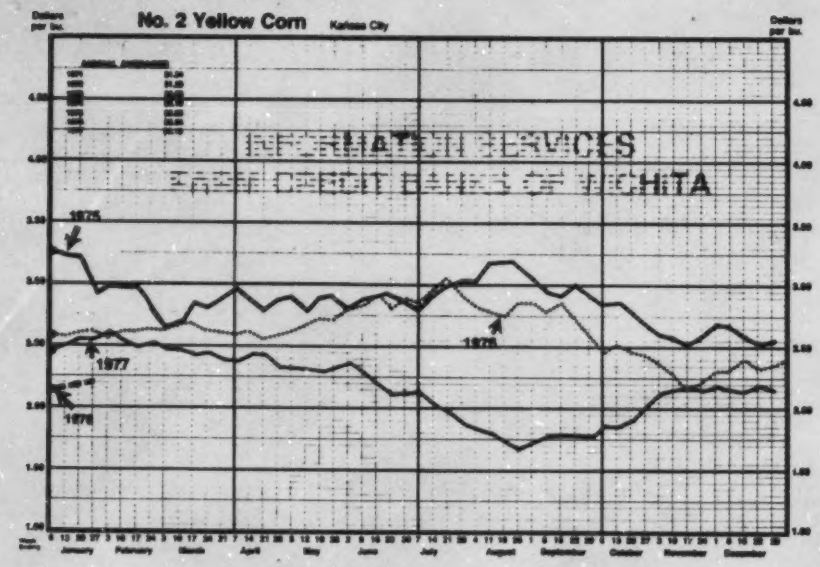
Store grain at harvest for later sale.

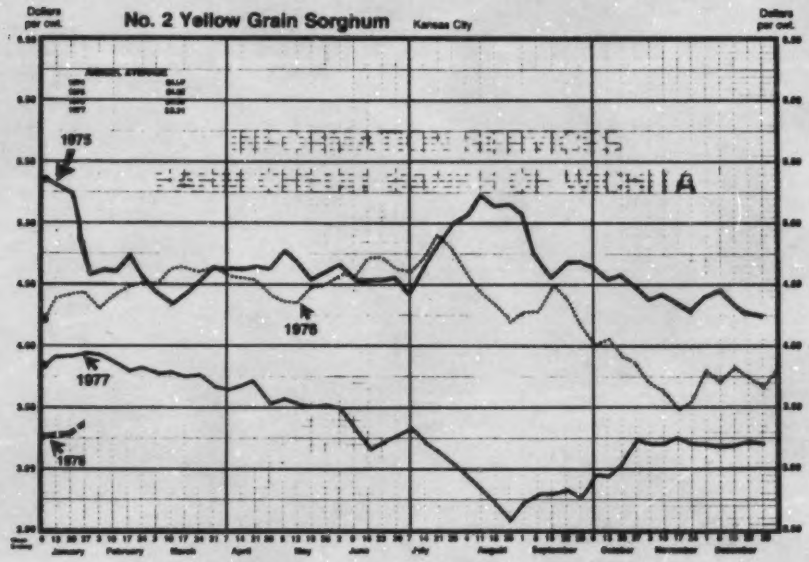
1. Advantages

   a. generally, a price advance that more than offsets on-farm or commercial storage costs. (Commercial storage usually costs about 4¢/bu./month plus a 1% shrink) A farmer needs to also figure his/her interest costs which on $8.00/bu. beans (1977) at 8% equals 64¢ per year or over 5¢/bu./month. Farm storage costs should be figured on an annual basis since it is difficult to avoid continuing costs of storage facilities even if the crop is sold. There will be a shrink and interest cost for farm storage also. The charts that follow give seasonal price trends for soybeans, wheat, corn, and milo.









b. speeds up harvesting. This may be a most important advantage of farm storage.

c. permits "averaging the price." By selling some grain each month or quarter, the average price should reduce some risks. This method may also help in planning a farmer's "cash flow."

Fowarding contracting

Contracting may be done at about any time. It is designed to reduce marketing uncertainty for growers as well as for handlers and processors. It is most beneficial during periods of great market unpredictability. Banks favor growers who contract over independent operations since contracting shifts at least a part of the risk away from the growers and improves their loan repayment capacity.

1. Advantages of cash contracts.

   a. eliminates some market risk and uncertainty
   b. grower can contract quantities smaller than 5,000 bushels
   c. no margin or commission required
   d. grower can get credit easier
   e. grower can make better management decisions
   f. need for storage facilities eliminated

2. Disadvantages of cash contracts

   a. grower has less market flexibility
   b. grower must deliver at contract price at time of delivery
   c. risk of default by grain dealer or processor

Many elevators now offer cash contracts (sometimes referred to as purchase and sales contracts, "bookings," etc.) to growers. Three types of contracts are generally available:

1. The fixed price agreement is the most common contractual agreement between buyer and seller. The producer simply agrees to provide a specified amount of grain to the handler or processor for a specified price. This price is usually based on the grain futures price at the time the contract is signed. The futures price is adjusted to account for any differences between the forward contract and the futures contract with respect to product quality and place of delivery. In addition to price and amount, most contracts also contain other specifications which define the obligations of both producer and buyer.

Farmers will want to check the relationship or "basis" between the futures price and the contract price before contracting. As an example, in March the central Missouri bid for July delivered wheat to the local elevator might be 50¢ under the Kansas City futures price for July wheat. Since the "normal" local elevator charge is 20¢ for transportation, 8¢ for elevating and handling, and 2¢ for profit or a total of 30¢, the 50¢ under bid may appear too wide and the farmer may decide to hedge with the futures market, use the deferred price agreement, or remain unprotected until the price more nearly comes in line.

2. The deferred price agreement, sometimes referred to as the "price later contract," specifies the amount, quality, place of delivery and other obligations of both parties, similar to the fixed price agreement. However, the final settlement price is not made a part of the contract. It is established at the seller's option during any business day prior to the date specified in the agreement. It permits the grower to deliver her/his grain and transfer title to the elevator at harvest, but delays pricing of the grain until some later time which the seller considers desirable. Discounts for quality variations and storage charges which will be applied to the final settlement price are usually spelled out in the agreement.

   There are several reasons why growers might prefer a deferred contract. For example, at the time of contracting the market situation could be so unsettled that the grower just couldn't predict what was likely to happen. Also, a grower might want to delay payment for her/his crop for tax purposes. Other growers might have storage facilites and might prefer to contract for the delivery for their crop at some date after harvest and earn some storage returns.

3. Pooled sales contracts are used primarily by producer cooperatives. The cooperative provides its growers with a cash advance at the time of delivery, subject to quality and moisture adjustments. Then during the year, as the grain is processed or sold, additional price settlements are paid to the growers based on the average price received for the season's sales.

Fixed price contracts, deferred price contracts and pooled sales contracts all have many variations. Some variations have very specific terms and conditions and others are very general.

To be fair and effective, a contract must be equitable to all parties concerned. Generally, the objective of the contracting buyer is to lock in or increase his/her volume of grain at his/her regular handling charges. The seller, on the other hand, usually wants to avoid price risk and lock in an acceptable return for his/her crop. A contract that won't accomplish these objectives for both buyer and seller may be worthless.

Hedging with the futures market. Of all the marketing alternatives available to grain producers, the futures market is **the most** complex and the most sophisticated. To use it successfully, you'll have to learn much about how the futures market operates, the mechanics of trading, the many different possibilities available to you as a producer, how to judge when you should act, and how to fit futures trading into your farm production and marketing plan.

A futures market is a market in which prices are established for commodities that will be delivered at some time in the future. It is a highly active market in which there are many buyers and sellers. The physical commodity itself is not bought and sold in the futures market. Instead, trading is in contracts for the delivery of a standardized quantity and quality of a commodity at some future date at a designated price.

The primary function of the futures market is to establish expected prices of commodities for several delivery months in advance. The contracts, in effect, are temporary substitutes for actual cash sales.

As a grain producer, the futures market can help you lock in a predictable price for your crop, even before the crop is planted - or while the crop is growing or in storage. Futures trading can help you eliminate worry about daily cash market fluctuations. It can make it easier for you to get credit.

The futures market also offers you great flexibility. With a cash contract, you agree to actually deliver your grain to a given buyer on a given date. When you sign the contract, you give up the option to change your mind later. But with a futures contract, you can establish a price for your grain and you still have the flexibility of deferring your choice of a buyer for your grain and your choice of the exact time you want to sell your grain in the cash market. When you actually want to deliver your hedged crop, you simply buy back your futures contract on that day and sell your grain for cash to a local buyer.

Commodity futures, then, offer you a way to shift your marketing risk to someone else who also is participating in the futures market and is willing to accept such risk. Once you lock in your desired selling price by selling a contract in the futures market, you are no longer concerned about whether the futures market goes up or down. Since cash and futures prices tend to come together as the futures contract approaches maturity, any loss you might sustain in the futures market will normally be offset by higher prices than you expected in the cash market where you actually sell your grain.

Feeding. Many Missouri farmers will market their feed grains by feeding to their own livestock. They will need to determine if the price of grain at which it could be marketed most advantageously will still permit a profit when fed to livestock. They generally have two options: (1) store grain in on-farm storage or (2) grain bank at a local elevator.

Selling for seed or other special markets. Some farmers sell wheat and soybeans for seed. Some are foundation, registered, or certified seed growers with the Missouri Seed Improvement Association. Other special markets might include local soybean extruders, large cattle or hog feedlots with demand for maybe high moisture grain, etc. These alternatives should be explored since the young farmer may have the extra labor needed to meet these special conditions.

Contract Provisions

The minumum basic provisions that should be a part of almost any forward contract are:

1. The parties to the contract.
2. Date of the contract.
3. The commodity being exchanged.
4. The quantity involved (in tons, hundredweight, or bushels).
5. How commodity is to be packaged (bulk, sacks, etc.).
6. Additional specifications (grade, weight, etc.).
7. The price per unit.
8. Terms of payment (amount down, etc.).
9. Point and method or delivery.
10. Time for final delivery.

The fewer points that are left open for misunderstanding, the less likelihood of such misunderstandings or problems arising.

It is also desirable that contracts spell out obligations for accepting and pricing grain downgraded by weather, delays in harvest, etc. When a deferred payment agreement is negotiated, daily storage costs, minimum deferment charges and other costs should be specified in the contract. Penalties for default also should be mutually agreed upon and specified in the contract to prevent any misunderstanding.

Contracts are legal and binding agreements, and it's always best that they be spelled out in writing.

A farmer could decide prior to planting to forward contract a portion of his/her estimated production (maybe one-third); then, when the crop is well along, she/he may contract an additional one-third; and plan to store the remaining one-third and contract for after harvest delivery.

Hedging Versus Speculating

Both hedgers and speculators trade in the futures market. *Hedgers are individuals who use futures to establish a price for a commodity which is either owned or committed for production and will be deliverable at some time in the future.* Speculators, on the other hand, have no commodity to deliver. When the speculator offsets a contract, he/she has no product to sell on the cash market. Thus, the speculator has no profits or losses in the cash market to offset his/her profits or losses in the futures market. The speculator profits only to the extent of being able to guess correctly which way the market is going.

Hedging is a method of forward pricing that reduces risk. But speculating is a way of increasing risk because you put yourself in a position of having to outguess the market.

Most producers are speculators. They sink time and money into production and yet they have no idea whether or not they will have any profit until their crop is sold.

If you use the futues market to forward price your grain crop, you are a hedger.

The Importance of Basis

You must thoroughly understand the concept of basis if you are to be successful in your own hedging operation. *Basis is the difference between the Chicago futures market price for grain at the time you buy back your offsetting futures contract and sell your grain in your local cash market.*

Soybean prices quoted in the futures market apply to U. S. No. 1 yellow soybeans delivered to Chicago at a given time. You get these prices only if you deliver your beans to Chicago and if they are of the same quality designated in the futures contract. Since most producers would rather sell their beans in their local cash market using the futures market only to forward price their crop - they have to adjust the Chicago futures price for (1) location differential from the producer's farm to Chicago, (2) differences in quality of the beans, (3) differences in the exact time the beans will be sold in the cash market, etc. This procedure is called "localizing the futures price."

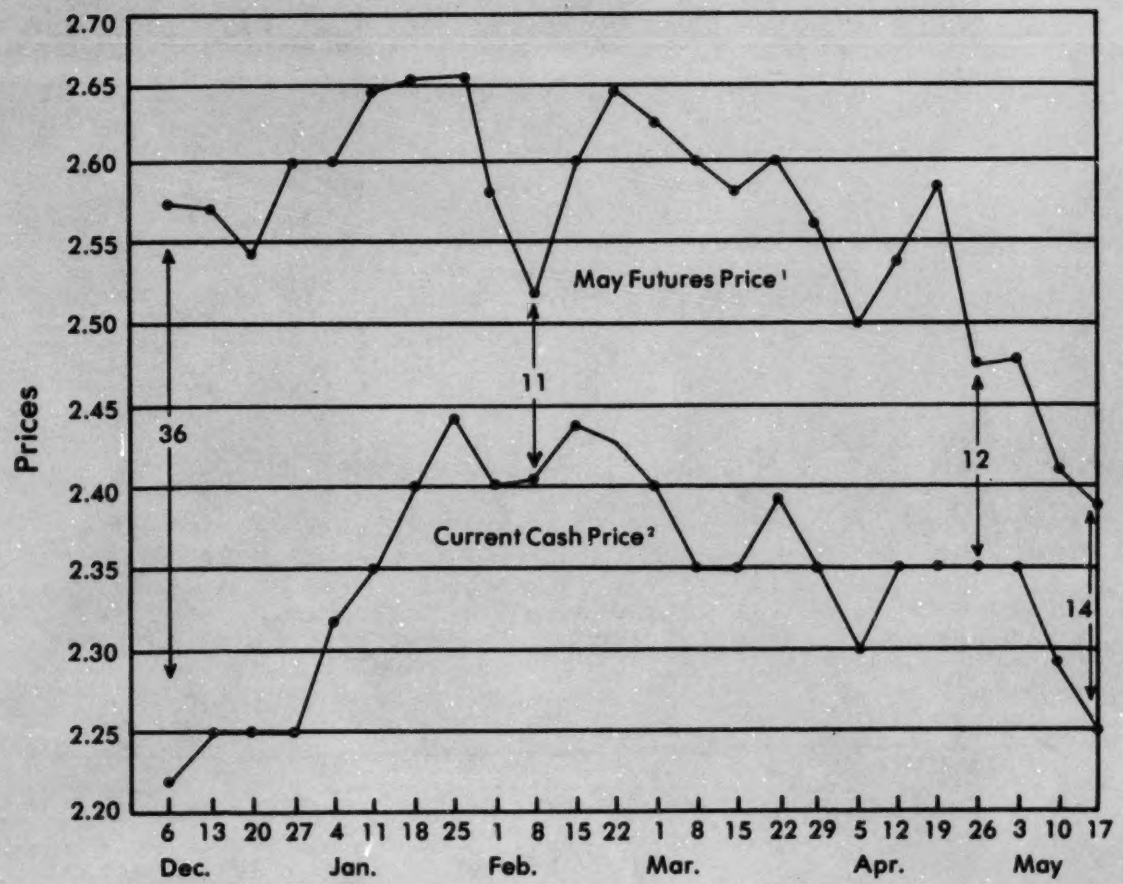
Basis varies from one location to another and changes from month to month, normally narrowing as the delivery month of a futures contract approaches. The basis normally reflects the cost of transportation and storage.

Price differences among most major market locations are predictable and are determined by patterns of trade among areas, costs of transporting commodities between the areas and storage costs. The patterns of trade and transfer costs tend to be stable or predictable. You can't predict the basis exactly in any given year, but you can predict basis much more accurately than you can predict actual cash prices for grain.

You can calculate your local basis rather simply. The best way is to examine past differences between Chicago futures prices and cash prices for your local market. You can get cash prices from local buyers, and you can get futures prices for the same day from the Daily Market Summary of the Missouri Department of Agriculture. You can then compute your local basis by finding the difference between the two prices. You can record these differences over time and get a basis pattern for your area.

You should keep a chart similar to the one on the following page on the grain in which you are most interested. As an example, if you are interested in selling corn in May and it is now the previous December, on the chart plot May futures and cash bids. This can be done once a week from the Daily Market Summary.

Cash and May Corn 1976-77



[1]Closing price - May Futures—Chicago Board of Trade

[2]Cash #2 corn - Central Missouri Elevators—Reported in Daily Market Summary

The basis for the 1976 crop was 36¢ on December 6. If the normal basis for your location is 11-14 cents as shown for central Missouri on the above chart, you could lock in storage income of 22-25¢/bu. The chart emphasizes the "importance" of basis - if you had closed the transaction on April 19 your storage income would have been 13¢ while on April 26 it would have been 24¢. The transaction on May 17 would appear as follows:

	Cash Market	Futures Market
Dec. 6	Stored corn @ 2.21	Sold corn @ 2.57
May 17	Sold cash corn @ 2.25	Bought corn @ 2.39
	+ .04	+ .18
	Storage Income + .22	

Mechanics of Trading

After you have decided your price objective and know your basis, you may want to hedge a part of your production. The contracts for different grains and the exchanges on which they are traded are listed below:

Commodities	Exchange	Trading Unit	Delivery Months
Corn	Chicago Board of Trade	5,000 bu.	Mar., May July, Sept., Dec.
Corn	Mid-America Exchange	1,000 bu.	Mar., May, July, Sept., Dec.
Cotton	Chicago Board of Trade	50,000 lbs.	Feb., April, June, July, Aug., Oct., Dec.
Wheat	Chicago Board of Trade	5,000 bu.	May, July, Sept., Dec., March
Wheat	Mid-America Exchange	1,000 bu.	May, July, Sept, Dec., March
Soybeans	Chicago Board of Trade	5,000 bu.	Jan., March, May, July, Aug., Sept., Nov.
Soybeans	Mid-America Exchange	1,000 bu.	Jan., March, May, July, Aug., Sept., Nov.
Oats	Chicago Board of Trade	5,000 bu.	July, Sept., Dec., March, May
Oats	Mid-America Exchange	5,000 bu.	July, Sept., Dec., March, May

A few special notes are in order. There are costs associated with hedging which include commission and use of margin money. The Commission of the Chicago Board of Trade is $40 for a corn contract round turn (both selling and buying back). The margin or good faith money is a deposit made by you to guarantee that you won't back out on the contract. Margin money is returned at the completion of the trade so it is the interest on the margin money that is a "cost." Margins are usually about 10% of the value of the contract, but vary by brokerage houses. As an example, a 5,000 bu. soybean contract with soybeans at $8.00/bu. might have a margin requirement of $4,000. Margin requirements are usually less for hedgers than for speculators. After you make your original margin deposit, you must maintain a certain margin if the market goes against you. As an example, if you sold beans at $8.00 with a $4,000 margin deposit and then beans went to $8.20/bu., you have decreased your margin $1,000 (5,000 bu. x .20) and may be called to send another $1,000. (If beans would drop to $7.80/bu., your broker would credit your account with $1,000.)

For a hedger interested in setting a price, she/he needs to have arrangements made with a creditor to meet margin calls, but it doesn't affect her/his profit except for the interest on the margin money. (Both commissions and margins are subject to change - check with your broker for current charges.)

Making the Hedge

A farmer plans to produce 16,000 bu. of corn. In April prior to planting, he/she observes that December corn on the futures market is $2.71. Figuring the normal basis in December as 41¢ the farmer would receive $2.30/bu. If he/she thinks the fundamentals point to a lower price than this and if this will cover all costs plus a profit, the farmer hedges one contract or 5,000 bu. (He/she may hedge part of the expected remaining 11,000 bu. at the same time, hedge it later, or go unhedged - normally, not over two-thirds of the expected production would be hedged until after harvest. The reason for this is that if unfavorable growing conditions occur, the farmer may not have the full 16,000 bu. and the short crop would drive prices up.)

At this point, the balance sheet appears as:

Cash Market	Futures Market
Raise 5,000 bu. @ $2.30 (long)	Sold 5,000 bu. @ $2.71 (short)

When harvest comes, the farmer sells his/her corn on the cash market and buys back his/her futures contract. If the price went up 25¢ and the basis remained as expected at 41¢, the farmer would sell his/her corn for $2.55 and buy his/her futures at $2.96.

Sell 5,000 bu. @ $2.55		Buy 5,000 bu. @ $2.96	
Profit	.25	Loss	.25

The farmer's increase of 25¢ in the cash market is offset by the decrease of 25¢ in the futures market. The farmer achieved a goal of $2.30 for his/her corn (minus commission and interest on margin money).

It is important to note that basis is the key to successful hedging. If the basis had become 51¢ (cash price at $2.45 with futures at $2.96), the farmer would have a profit of 15¢ on the cash market and a loss of 25¢ in futures which would have an effective selling price of $2.20 for his/her corn instead of the goal of $2.30. A farmer must know his/her basis for the contract month - not just the average for the year. Normally, basis is the widest at harvest.

Storage Income

There are many ways a farmer can use the futures market in addition to setting a price for his/her production. One method is to guarantee a storage profit. As an example, if at harvest, cash corn is $2.20/bu., December is $2.71 and March is $2.77, the farmer might store his/her corn and sell March futures. If the expected March basis is 31¢, this will guarantee storage income of 26¢/bu. (6¢ is difference between December and March and covers storage costs and 20¢ is due to basis change.)

Inverted Basis

Obviously, in some areas of Missouri and in some years there may be an inverted basis part of the year (cash higher than futures). This is a market signal that the market will not pay for storage at the present time. As an example, cash grain in southeast Missouri ready to load for export may be higher than the futures some months following harvest. Or, a farmer that can sell grain to other farmers to feed or sell to a feed manufacturer in a grain deficit area will often have cash markets as high as or higher than the futures. In some locations, the basis narrows more than it will in surplus areas and there is a greater opportunity to use this strategy of hedging for increased storage profits.

Other references or sources of information should be consulted for additional methods of using hedging for profit.

Credit: Extension Leaflet No. 197, T. Everett Nichols, Jr., Extension Economist, Grain Marketing, North Carolina Extension Service

Marketing Alternatives for Producers of Wheat, National Association of Wheat Growers

13

MARKETING CASH LIVESTOCK

Introduction

There are many factors that have influenced livestock marketing. Originally, livestock was produced for the individual family and some sold locally to butchers, neighbors and others. Then, as railroads developed it became possible to ship livestock long distances to packing plants located in eastern population centers. The next major development was refrigerated railcars which made it possible to locate packing plants in cities nearer livestock production centers. The dressed meat was then shipped to eastern population centers. During this time, the large terminal markets which were located in the center of these packing plants were developed. Rail transportation encouraged the assembly of livestock in regional centers where the animals could be moved without re-loading to the packing plants. This was the period when terminal markets sold 75-90% of the livestock.

Although terminal markets are still large operations, in 1975 they handled only about 14% of the cattle and 16% of the hogs in the United States. Most packers have moved from the major cities to interior points containing concentrated livestock areas. Packers now secure most of their livestock either direct, including country dealers (66% of the cattle and 72% of the hogs), or through auctions (20% of the cattle and 12% of the hogs).

Feeder livestock are marketed primarily through auctions (including auctions located at terminal markets) and directly between the producer and the feeder. About 57% of the feeder cattle move through auctions, 37% direct, and 6% through terminals. Feeder pig marketing has become much more important in recent years with many of the pigs fed-out on a different farm than where produced. Auctions of various types handle most of the feeder pigs with the remaining sold direct to the feeder.

Markets in Missouri

Missouri livestock producers have many alternative choices for marketing livestock. The following maps show that there are about 600 outlets in Missouri where one or more species of livestock can be sold (not including sales held by breed associations, livestock shows and locker plants).

MISSOURI LIVESTOCK OUTLET MARKETS[1]

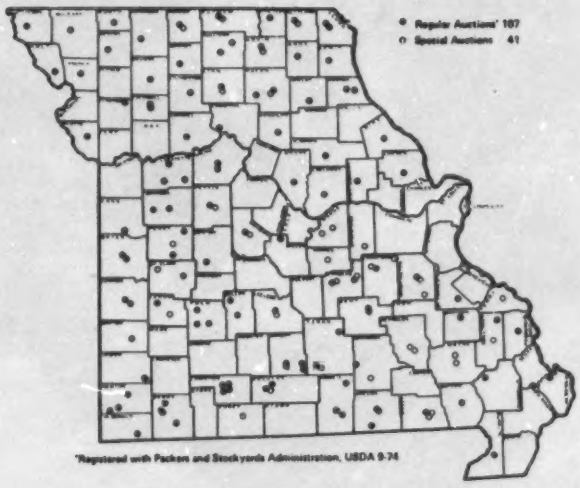


Figure 1. Auction Markets

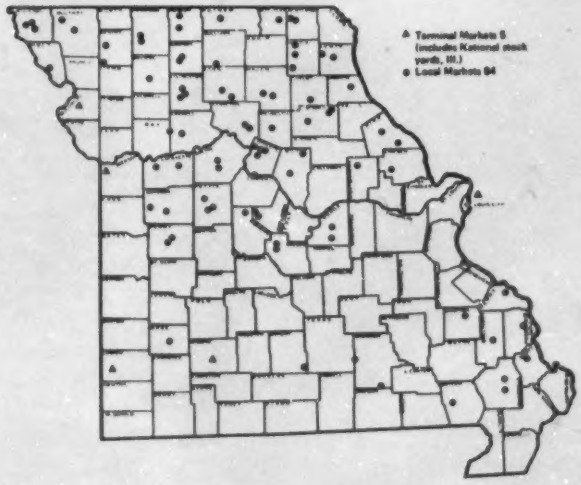


Figure 2. Terminal and Local Markets

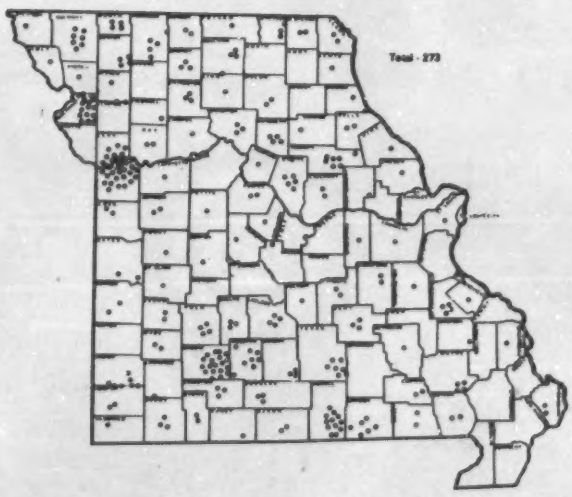


Figure 3. Dealers and or Order Buyers (Includes only those registered with Packers and Stockyards Administration, USDA 9-74)

Figure 4. Slaughter plants

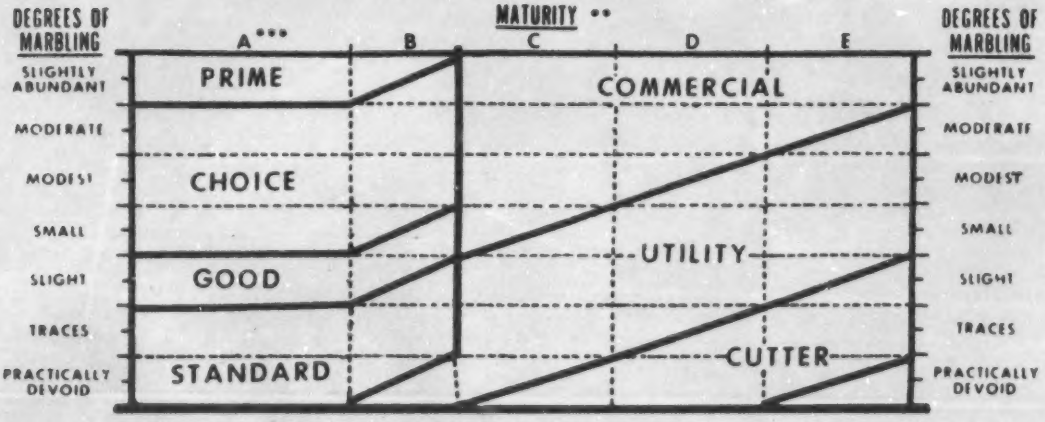
[1]UMC Guide Sheet

Value of Fat Cattle

In order to choose between the alternative markets for live slaughter cattle, the farmer needs to know how cattle are priced (receipts) and the costs associated with the different marketing methods. The price received is basically what the packer can sell the product for minus cost of processing. Price is based on three factors: (1) *quality grade*, (2) *yield grade*, and (3) *dressing percentage*.

Quality grade refers to Prime, Choice, Good, etc., and is primarily an indication of the "finish" of an animal. The following chart gives standards for the various quality grades. Notice that age or maturity of the animal and marbling affect quality grade. Most feeders plan to produce a "choice" grade animal since this grade is in most demand by the consumer.

RELATIONSHIP BETWEEN MARBLING, MATURITY, AND CARCASS QUALITY GRADE *



*Assumes that firmness of lean is comparably developed with the degree of marbling and that the carcass is not a "dark cutter."

**Maturity increases from left to right (A through E).

***The A maturity portion of the Figure is the only portion applicable to bullock carcasses.

From: Bulletin, Official U.S. Standards for Grades of Carcass Beef - Ag Marketing Service, USDA

Yield grade refers to the "cutability" of a carcass. It is measured by the percent of salable meat from a carcass. An overly fat carcass with a lot of trim and waste would not be as desirable. A formula for determining yield grade is: Yield Grade = 2.50 + (2.50 x adjusted fat thickness, inches) + 0.20 x (percent kidney, pelvic and heart fat) + (0.0038 x hot carcass weight, pounds) - (0.32 x area ribeye, sq. inches). Most buyers and sellers develop the ability to "eye-ball" yield grade. Yield grades are 1, 2, 3, 4, and 5 with 2 and 3 being the industry standard. A verbal description of each of the yield grades is difficult; however, a 2-3 might be a black-white face steer weighing 1,050# that has been full fed grain for 100-110 days that is not over-finished. A 5 might be a short legged, short bodied, compact steer that is over-finished with patches of fat around the tail head, flat over the back and wasty in the brisket and flank areas. A #1 might be a framey, muscular animal with minimum fat cover that has been fed for 90-100 days weighing 1,100 - 1,200#.

Dressing percentages refers to the percent of the live weight that is in the carcass. Most choice, yield grade 3 steers should dress 61-63% with heifers 59-61%.

There is always a trade off between characteristics - as an example, a steer with more fat as a No. 5 will have a higher dressing percentage than a No. 3. Also, in order to get most steers into the Prime Grade requires a longer feeding period with more fat and frequently a lower yield grade. The goal of choice, #2-#3, 62% dress is probably the compromise accepted by most feeders and packers.

Pricing Cattle

In determining the price of a live animal using these factors, the seller finds the price of the carcass beef he/she has for sale. The Daily Market Summary from the Missouri Department of Agriculture is available in most vocational agriculture departments and reports the Midwest Carlot Meat Trade on a daily basis. Radio farm reports give up-to-date markets and several auctions and other locations have ticker tapes reporting the dressed beef markets. This gives the price at which carcasses are selling - it does not reflect the value of hides and other by-products. The Daily Market Summary also periodically reports "Estimated Carcass Value Based on Fabricated Beef Cuts." One other factor needs to be noted - most packers use $20-$25/head for their processing charge.

When the value of the by-products per head are about $20-$25, the packer will pay the farmer the same per head for the live animal as he/she receives for the carcass. In that case, if the Daily Market Summary reports *Choice, No. 3, 600-700# steer beef* at $70.00, the steers that will produce that carcass and dress 62% will sell live for about $43.40/cwt. ($70.00 x .62 = $43.40). In early 1978, the value of the by-products was about $40.00/steer. After subtracting $25/head processing cost, about $15/head or $1.50/cwt. for a 1,000 pound steer can be added to the $43.40 to get a live price of $44.90. A farmer with a load of steers for sale that would average choice 3s with 62% dress would probably expect to try to price them at $45.00 at the feedlot with 3-4% shrink or she/he would expect $44.75-$45.25 if sold at an auction or terminal market.

Points in Pricing Cattle

Shrink is critical. The 62% dress is based on live pay weight and hot carcass weight. Many factors affect shrink so some industry practices have developed that need to be understood. If cattle are sold direct, they are normally weighed at the feedlot (or loaded) at 7:00 a.m. directly out of the lot with a 4% pencil shrink. One packer has made the following offer on shrink: 4% at the feedlot, 3% in town after a short haul, 1% at the packing plant (100-mile haul), or 0% shrink if cattle are delivered the night before being sold. Most packers want a 2% shrink if hauled 30-40 miles. Some random checks indicated each of these netted the feeder about the same pay weight.

In selling through a terminal market, the following practices may reduce shrink to the minimum: (a) withdraw protein 48 hours prior to shipment; (b) reduce grain to a half feed day before shipment; (c) provide grass hay free choice last 2-3 days prior to shipment; (d) provide no grain 12 hours before shipment; and (e) allow cattle grain and hay at market before sale.

If cattle are sold off the truck without feed as at auctions, better weights may be obtained by continuing half feed of grain the day of shipment in addition to the grass hay fed free choice.

Packer needs. Packers may bid .25/cwt. or even .50/cwt. more than the $45.00 in the above example if they need cattle for an immediate kill. Obviously, they would bid $44.50-$44.75 if they had their kill bought for a week ahead and the market lacked strength.

Average the lot. When selling cattle in a lot that are not all choice 3s with 62% dress, the price would be an "average." The price of choice yield grade 4 carcass beef was $1.50/cwt. lower than 3s the day the above example was obtained. On a live basis for 62% dress, that is $.93/cwt. less. The same day, Good Yield Grade 3 carcass beef was $3.75/cwt. less than choice. In other words if Choice 3 steer beef was $70.00; Good 3 was $66.25; Choice 4 was $68.50, etc. With the $1.50 added for by-product value the live choice 3s with 62% dress were $44.90; Good 3s - 62% dress would be $42.57; and Choice 4s - 62% would be $43.97.

In arriving at a price for an entire lot where some of the steers don't meet the grade, etc., an average would be figured.

Transportation is usually paid by the seller unless agreed to differently. In 1978, this was about $.50/cwt. for about a 100-mile haul.

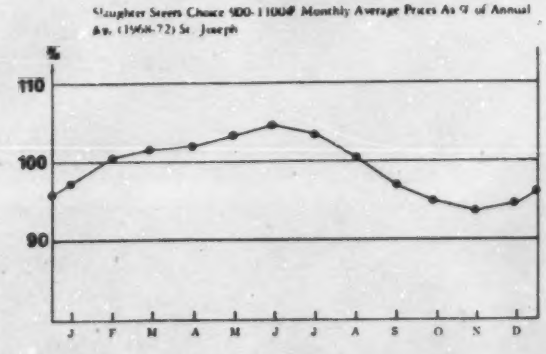
Other costs need to be included when comparing alternative markets. In 1978, this totaled about $.50/cwt. for terminal markets including yardage, yard fire insurance, pellets, commission, beef promotion, and transit insurance. With the pricing example used above, the farmer that sells through a terminal market thinks the commission company can get $.50/cwt. more for the cattle than the farmer could obtain selling direct out of the feedlot.

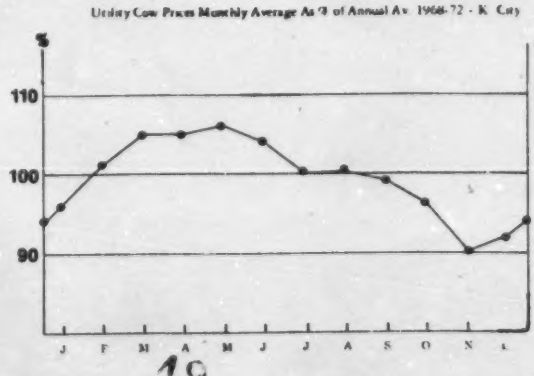
For many smaller feeders in Missouri this is probably a correct assumption since they may not attract many competitive packer bids to their feedlot. It is also reflected in the 30% of Missouri cattle selling through terminal markets versus 13% in the United States or 2% in Kansas.

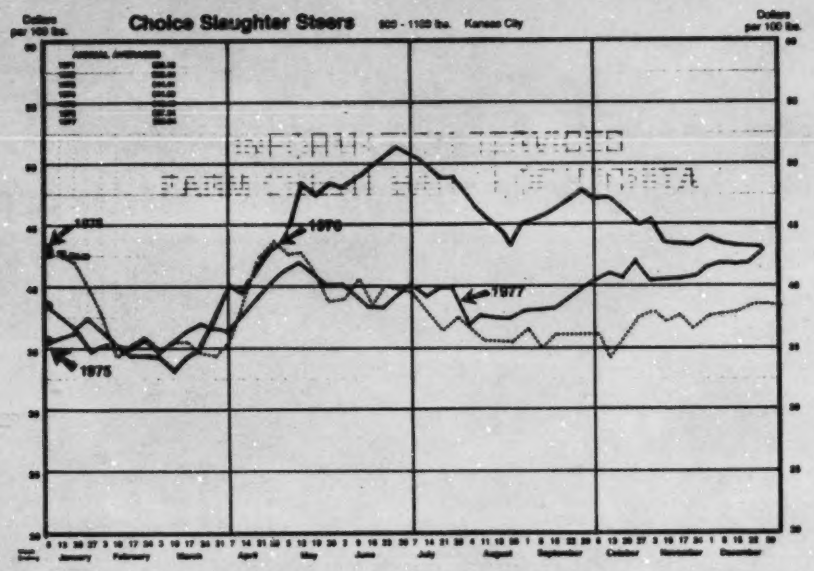
Seasonal Prices

The following charts show seasonal price changes. Note that some charts are 1968-1972 and expressed as an index while the other charts are actual dollar figures for recent years.

The seasonal pattern for steers is not stable while that for slaughter cows is more consistent.







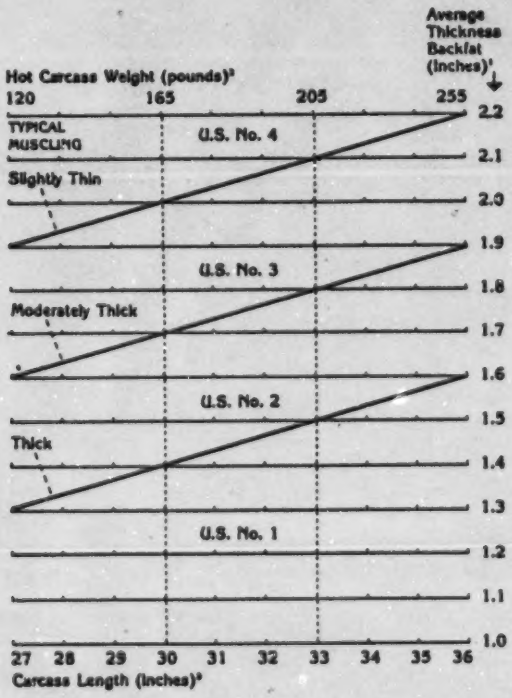
Selling Live Slaughter Hogs

The pricing of hogs is different than for cattle. The main factors relating to value are *grades* as No. 1, No. 2, No. 3, etc.; *dressing percent; percent of carcass in the 4 primal cuts* of ham, loin, picnic, and butt; and *weight* (220-230# is industry standard although some packers prefer other weights).

Standards for USDA grades are in the table below:

Carcass Grading

Relationship between average thickness of backfat, carcass length or weight, and grade for carcasses with muscling typical of their degree of fatness.



1 An average of three measurements including the skin made opposite the first and last ribs and the last lumbar vertebra. It also reflects adjustments, as appropriate, from normal fat distribution.

2 Carcass weight is based on a hot packer style carcass.

3 Carcass length is measured from the anterior point of the aitch bone to the anterior edge of the first rib.

Usually hogs dress about 70% and have in excess of 50% of their carcass weight in the 4 primal cuts. These hogs are often called 35s (.70 x .50 = .35). This reflects that 35% of their live weight will be in the 4 primal cuts. Many farmers enter local barrow shows sponsored by Young Farmer Associations, FFA Chapters, County Pork Producer's Associations, and others and have an idea of how their hogs dress out. Many will have entries close to 60% of the carcass weight in the 4 primal cuts. Obviously, these are "worth" much more than hogs with 50% primal cuts. (Very seldom are the better hogs priced enough higher to reflect their higher value.) One method formerly used by one company in Missouri had their base price for the day quoted for 35s with a .25/cwt. premium for 36s and another .25/cwt. premium for 37s. It should be noted that a load of hogs loaded about noon after they have eaten, drank, and been hauled a short distance to a buying station may have a dressing percentage of 70%. The same hogs hauled 100 miles to a terminal market and allowed to stand several hours may have a dressing percentage of 72%. If they had 54% of their carcass as primal cuts, they would be 37.8s locally and 38.8s on the terminal. They may be worth $1-$1.50/cwt. more to the packer weighed at terminals versus country point. But, the farmer would "net" the same dollars per head.

Practices in Marketing Hogs

Some practices you can follow to be sure you obtain a competitive bid for your hogs are:

Be able to evalute the quality of your hogs and know their relative value.

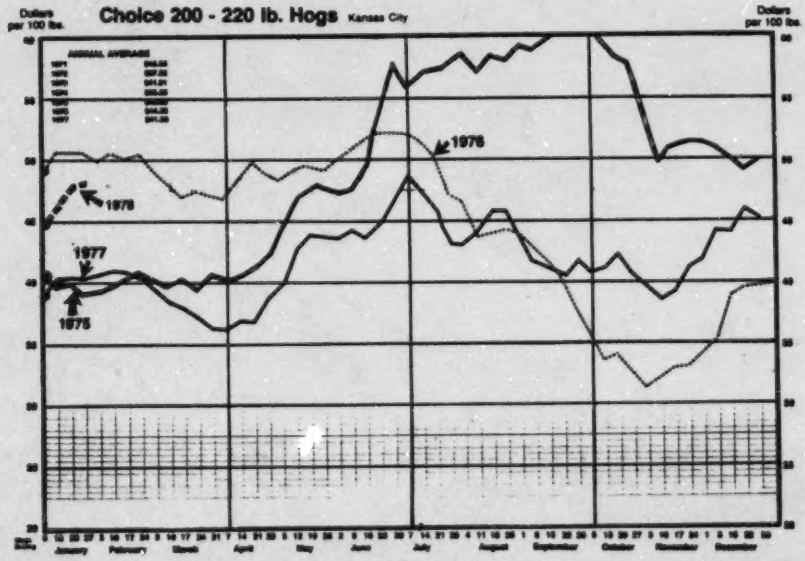
Compare "bids" from different local sources and compare with terminal price.

Deduct costs associated with each including shrink to arrive at net price.

Aim for seasonally higher markets.

Seasonal Hog Prices

The following chart gives market prices on an actual cost price basis for recent years. This pattern has been rather consistent. Many producers are farrowing year round, but for the person farrowing two or four times a year, they could plan for the higher months on an average.



Selling Carcass Grade and Weight

An alternative "cash" method of marketing livestock is to sell on carcass grade and weight (grade and yield). In this method, you deliver your cattle or hogs to the packing plant. They are slaughtered, weighed, and graded prior to pricing and payment. This method of selling has been promoted by different groups including some packers, but up to now it has not been well accepted by farmers. One source estimates less than 6% of the hogs in Missouri are sold carcass grade and weight.

When to Use

When you sell carcass grade and weight, you think your livestock are worth more than they will sell for on a liveweight basis. If the liveweight bid accurately reflects the animal's true value, then the liveweight bid and carcass bid will be the same. There are situations in which it would definitely be to the advantage of the farmer to sell carcass grade and weight. Examples of these situations might be: (1) producing a quality hog that has a higher percent of 4 lean cuts than is being reflected in the live price bid; (2) producing calves from a select group of cows and bulls and carrying them through the backgrounding and feeding phase to produce a high choice, yield grade 2 and 3 carcass at 1,050#, (3) having a load of off-type cattle for sale - Holstein steers that have been fed 100 days with a good backgrounding program - that you think will grade low choice and the best bid you can get is on the basis of the "good" grade.

Cautions in Selling

Some cautions on selling carcass grade and weight need to be pointed out: (1) Do you know the price to be received for different quality carcasses? Not all cattle in a load will grade choice No. 3s. What will you receive for the good grade - prime grade? What price for No. 4s and 5s - any premiums for No. 2s? Is there a discount for carcasses out of the weight range of 600-700#? The price should also reflect by-product values above $25/head. (2) Do you know carcass weighing procedures? The carcass should be weighed hot - is there a pencil shrink? (A 2% pencil shrink which some packers want amounts to $1.20 on a $60/cwt. carcass price and this becomes $7.20/head on a 600 pound carcass or $288 on a 40 head load.) (3) What about damage to the carcass from bruises and grubs? Some cattle have been severely discounted - more than the weight loss to the carcass from trimming - and the farmer has been very unhappy with the settlement price. This needs to be decided at selling time. (4) What about condemned carcasses? Some packers accept the risk if the livestock pass visual live inspection and others expect the farmer to stand the risk. One condemned 600# carcass at $60/cwt. is $360. (5) Do you have a firm price as mentioned in (1) above? Some packers want to buy on the basis of the "yellow sheet" the day of delivery which may be a week ahead. Very seldom is this to the farmer's advantage since it is passing all price risk to the farmer and the packer probably wouldn't be suggesting it if she/he thought the price would advance. (6) Do you know the settlement procedures? When will you be paid and what information will be provided? (7) When will livestock be slaughtered? Be sure livestock are slaughtered on the day delivered to the plant. Tissue shrink, which means less carcass weight can occur if allowed to stand without feed and water too long.

It is suggested that a farmer check carefully prior to selling carcass grade and weight and maybe try a part load the first time. She/he needs to also "figure" correctly. Many times farmers think their cattle have a high dressing percentage when actually they have a high shrink prior to live weighing. As an example, a 1000# steer with a 610# carcass dressed 61%. If the same steer had been allowed to stand overnight without feed and water prior to weighing, he might have only weighted 968#. In this case, the report would show a dressing percentage of 63% (610 ÷ 968 = .63).

Weight to Sell Feeder Cattle

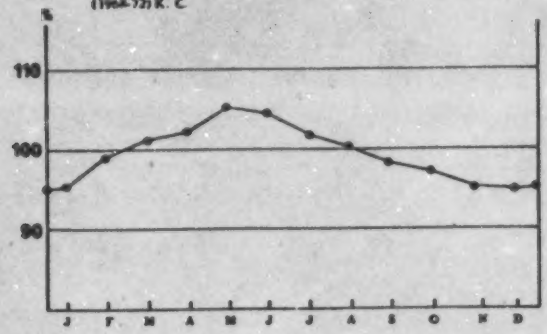
Many of the practices in selling feeder cattle are management type questions that tie in with the over-all management plan of the farm. Obviously, a farmer would want to sell the weight, grade, and quality cattle that are the most profitable for him/her. If he/she owns the cows, it almost always will be most profitable to produce top quality calves whether he/she sells at weaning or backgrounds them first and sells when they are ready to go in the feedlot. Producers that buy calves and background them would buy the quality, weight, etc., that provides the most profit. Often, this may not be the best quality and may include improving the calves quality while they own them by dehorning, castrating, worming, spraying, etc.

The decision whether to sell calves at weaning or to carry them through the backgrounding phase depends upon the *cost of producing the extra weight* versus the *price received for the extra weight.* In the mid 70's, heavier feeder cattle sold for more per pound than light weight cattle. As an extreme example, in late 1976, 300# choice heifer calves were about 23¢ per pound and 600# choice heifer calves about 33¢ per pound. How much did the farmer receive for the 300# additional gain? (300# x .23 = $69, 600# x .33 = $198, $198 - $69 = $129, $129 ÷ 300# = .43). The farmer received 43¢ for each pound added; so, if the cost of production was less than this it would pay to background them. The Missouri Farm Management Newsletter FM 77-6 (April, 1977) points out that when *a 750# steer sells for 89% or more than a steer calf on a per pound basis, backgrounding is more profitable than cow-calf; inferior when it sells for less than 89%.*

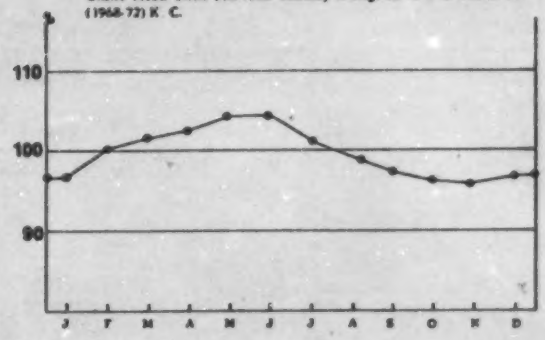
Seasonal Price Cycles

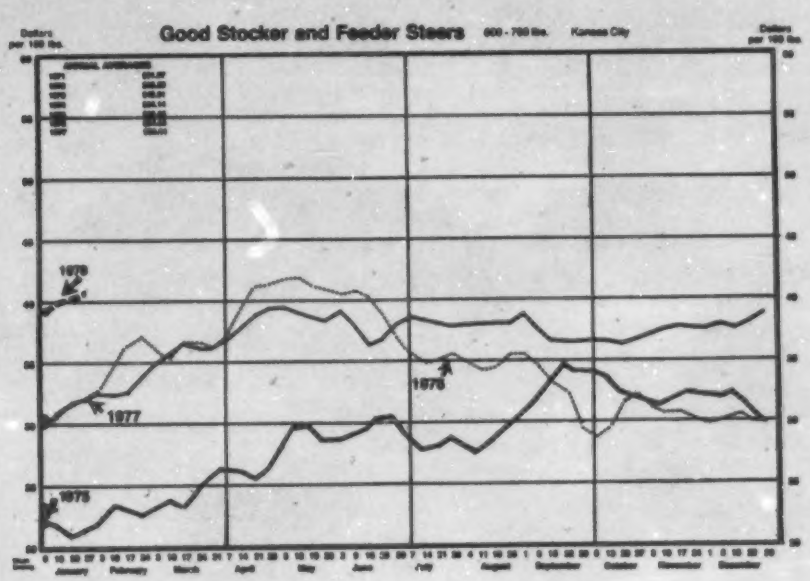
Seasonal price cycles on feeder cattle indicate *high prices in the spring* when grass is available and lower prices in the fall when winter feeding will be necessary. It is also noteworthy that *heavier feeder cattle do not fluctuate as much* as lighter cattle since many of them will move directly to the feedlot. Charts for 1968-72 and 1975-77 prices are shown.

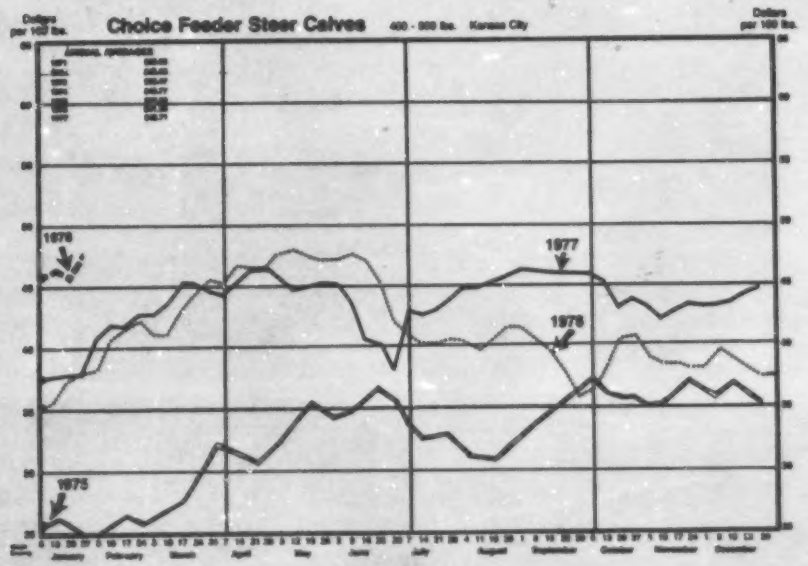
Choice Steer Calves 500-550# Monthly Average As A % of Annual Av. (1968-72) K. C.



Choice Feeder Steers 550-750# Monthly Average As A % of Annual Av. (1968-72) K. C.







Some farmers in Missouri have found it to their advantage to reduce their cow herd numbers enough to have grass and hay to background their calves and sell at heavier weights.

Some practices in actual selling of feeder cattle include:

1. Avoid excessive shrink on cattle. Some factors that affect shrink are: time in transit, distance hauled, degree of fill, weighing conditions, weather, sex, weight, etc. The following table gives results of one study relative to shrink on feeder cattle:

SHRINK OF FEEDER CATTLE AS RELATED TO TIME IN TRANSIT[1]

Time in Hours	Percent of Shrink
1	1.8
2	3.6
3	3.6
6	3.8
9	5.8
17	8.2
[2]35	7.2
[2]59	10.2
[2]83	10.2

[1]Source: University of Wyoming

[2]Feed, water and rest during journey.

2. Produce a quality calf of the type in most demand by cattle feeders.

3. Perform the practices necessary for maximum profit such as:

   a. castrate

   b. dehorn

   c. wean (other considerations are needed here as: "bloom" of the calf, relative prices of different weight calves, etc.)

   d. vaccinate for Black-leg, malignant edema, IBR (consult local veterinarian).

   e. have free of lice, grubs, flies, etc.

4. Sell at the weight most profitable for your situation (refer to earlier paragraph on how to figure).

5. Sell at the time of year when prices are highest for the weight calf produced. (Refer to earlier paragraphs on seasonal prices.)

Feeder Pig Markets

There are probably four alternative markets available to Missouri feeder pig producers: (1) *sell directly to finisher,* (2) *sell through regular auction markets,* (3) *sell through specialized feeder pig markets,* and (4) *sell on a formula pricing method.* Most pigs are being marketed through one of the two auction methods. Selling direct is an expensive method. It limits the number of prospective buyers because of the extensive amount of driving, the small groups of pigs in one location, and the difficulty of securing desired numbers of the weight and quality needed.

Regular auction markets include those that sell feeder pigs as part of their regular sales which may also include other species of livestock. These normally accept pigs of all quality, ranges, grades, and weight. As a result, the price for top quality pigs may not be as high as in some of the auction markets that set higher standards and attract more order buyers and larger volume feeders.

Specialized feeder pig markets include auction markets that have sales for feeder pigs only and normally have 1,000-3,000 pigs at each sale. These markets include Mexico and St. Joseph which conduct sales one day per week; special auctions such as MFAs tele-auctions, IPLA markets; co-operative feeder pig sales; and quite a number of auctions in south central Missouri. Most of these have quality standards requiring pigs to be castrated, docked, and weigh between 40-100#, etc.

Formula Pricing Pigs

Formula pricing pigs is normally between a producer and a feeder. Most of the systems base the price on a "factor-system" such as 1.6 times market price of a market hog for a 60# pig (Example: If market hogs were $40/cwt., the price of a 60# pig would be $64/cwt. or $38.40/head). This has not been satisfactory since costs other than market hog price affects the

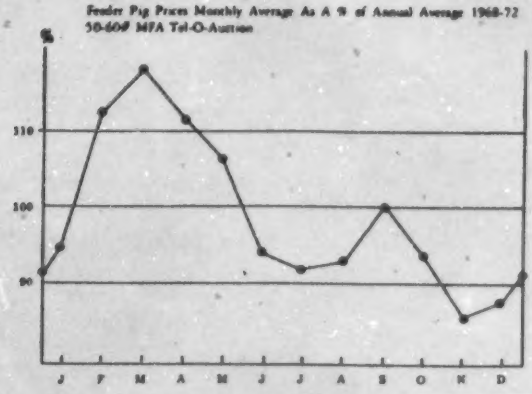
feeder's profit. The price of grain may go down and the price of pigs be higher than the formula would reflect or vice-versa. Some Missouri feeder pig producers that sell all their pigs (they produce pigs that are efficient and will have a high quality carcass) receive, as an example, a $4.00/cwt. premium over a market that is reported in the Daily Market Summary of the Missouri Department of Agriculture. As an example, if 50# No. 1 and 2s are reported at $77/cwt., they would receive $81/cwt. for their pigs. All culls, unthrifty pigs, etc., would be excluded.

Marketing Practices for Pigs

Some marketing practices of feeder pigs that may help improve profits include:

1. The producing of a quality pig that is thrifty, castrated, docked, sprayed, wormed, and sold in uniform lots.

2. The planning of farrowings and marketings for seasonal higher prices. The chart below shows a price index by months.



3. The selling of the weight pig with the most profit in it. The chart below shows prices for different weights of pigs. You would need to use the diminishing return principle to determine the most profitable weight.

Average Price Per Cwt. and Per Pig for Feeder Pigs
at MFA Tel-O-Auction, 1966-75

Weight of Pigs	Price Rec'd/Cwt.		Price Rec'd/Pig	
	1966-1971	1972-1975	1966-1971	1971-1975
45 lbs.	$38.92	$72.42	$17.51	$32.59
55 lbs.	36.94	67.14	20.32	36.93
65 lbs.	34.14	60.70	22.19	39.46
75 lbs.	31.71	56.14	23.78	42.11
85 lbs.	29.66	52.81	25.21	44.89
95 lbs.	27.64	48.66	26.26	46.23
Average	$33.17	$59.65	$22.55	$40.37

Value Per Pound Gain for Adding
10 Pounds to Selling Weight
(MFA Tel-O-Auction Prices)

Weight of pig	1966-71	1972-75
45 lbs. + 10	$.28/lb.	$.43/lb.
55 lbs. + 10	.19	.25
65 lbs. + 10	.16	.26
75 lbs. + 10	.14	.28
85 lbs. + 10	.10	.13

MARKETING LIVESTOCK - PROTECTED PRICE

Introduction

Although the number of livestock produced in Missouri with some type of price protection is relatively small, some of the methods offer definite advantages to the producer. For the purpose of this unit, methods of marketing livestock with price protection include the following: (1) contract production, (2) forward price contracting, and (3) using the futures market. Each of these are discussed in more detail along with management techniques in using them.

Contract Production

There are different methods used in contract production of livestock. They vary from some that shift none of the price or production risk from the farmer to the contractor to those that shift almost all of the risk to the contractor.

Examples of different types of contracts are:

Feeder Livestock Marketing Program Contract. These contracts permit a producer to market her/his feeder livestock through a certain marketing program. The producer agrees to market her/his feeder livestock through the program and agrees to meet certain standards as weight, health, quality of breeding stock, and freedom from obvious abnormalities.

These contracts leave all price and production risk with the farmer. The main advantages to the farmer are: (1) sometimes a better price because of the "assembly" function for quality feeder animals, (2) markets held on regular intervals, and (3) some contracts providing fieldpersons assistance in selecting breeding stock and other management aids.

These contracts are available in certain areas of the state for both feeder pigs and feeder cattle. An example of a feeder pig contract is in the Instructor's Guide.

Breeding Stock Leasing Contract. There are several companies offering a breeding stock contract at the present time. These are basically a money-lender's contract. According to some calculations, the interest rate may be as high as 80%. There may be some advantages as management supervision, but all aspects of the contract need careful consideration.

Production Payment A Contract. This type of contract has the contractor furnishing the feeder pigs, feed, and medicine. The farmer provides the facilities, labor, and utilities. The contractor owns the hogs and pays as an example two cents per pound of gain put on by the farmer. (A feeder pig delivered to the farm at 40# and sold on the market at 230# gained 190# and the farmer received $3.80/head.) Some of these have incentives for feed efficiency, livability, etc.

All price and most production risk is assumed by the contractor.

Production Payment B Contract. With this contract, the farmer provides the feed, facilities, utilities, and labor. The contractor provides the livestock and pays so much per pound of gain, as an example, 24¢ per pound of gain on a feeder pig.

All price risk is borne by the contractor and production risks are shared equally since the contractor loses the original livestock and the farmer loses his/her feed, labor, etc. In some cases, the farmer assumes all production risk since the total weight delivered to his/her farm is subtracted from total weight sold to arrive at pounds of gain produced.

A farmer needs to know the weighing conditions that will be used in determining pounds of gain. As an example, some contracts for wintering and/or grazing cattle weigh the cattle at a distant point and may include a pencil shrink. In some cases, these have not paid the farmer for the pounds she/he actually produced.

Forward Contracting

Forward contracting as used in this unit refers to selling in advance for a known price for a certain amount and quality of livestock. A typical example might be a farmer that in March agrees to sell 30,000 pounds of hogs in July for $41.50/cwt.

Forward contracting applies to slaughter hogs and slaughter cattle as used here. Forward contracting is also frequently done with feeder cattle, but usually between the producer and a cattle finisher or feeder.

Most of these contracts are in units that correspond to the contracts or part contracts on the futures markets. The quality standard also usually corresponds to the futures market contracts. This is because the contractors normally hedge on the futures market at the same time they sign a contract with a farmer so their price is also protected.

Most of the contractors are packers or operators of livestock buying stations. Their goal is to provide a service to their customers and also to obtain their share of the livestock.

How A Forward Contract Works

A copy of a forward contract used in Missouri is in the Instructor's Guide. This contractor bases the contract price at $2.50/cwt. under the Chicago Mercantile Exchange price. The $2.50/cwt. will cover basis (difference between Peoria hog price and local buying stations), interest on margin money, commission, and 25¢/cwt. profit. (When $41.50/cwt. was offered for July hogs; futures market price for July hogs was $44.00.)

Advantages and Disadvantages of Contracting

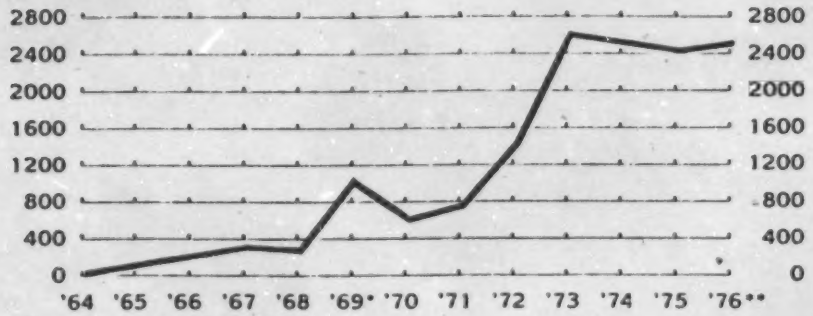
Advantages to the farmer of forward contracting include: (1) *selling at a known price,* (2) *avoiding the mechanics and margin money of a futures contract,* (3) *dealing with a person with whom the farmer is acquainted,* and (4) *avoiding basis change. The major disadvantages of this method of setting a price are reduced flexibility compared to use of the futures market and higher costs.* Since the contractor expects delivery of the hogs or cattle, the farmer cannot change her/his mind as easily as with the futures market.

Some points relative to the sample forward contract are as follows: (1) hogs must be on the farm before contracting, (2) farmers need to be selective in deciding when to contract (some of the same procedures as are included later under using futures markets apply here), and (3) the delivery period is the last week of the preceding month and the first two weeks of the contract month. As an example, if the contract is for July, the delivery period will be the last week of June and the first two weeks of July.

Using Futures Markets

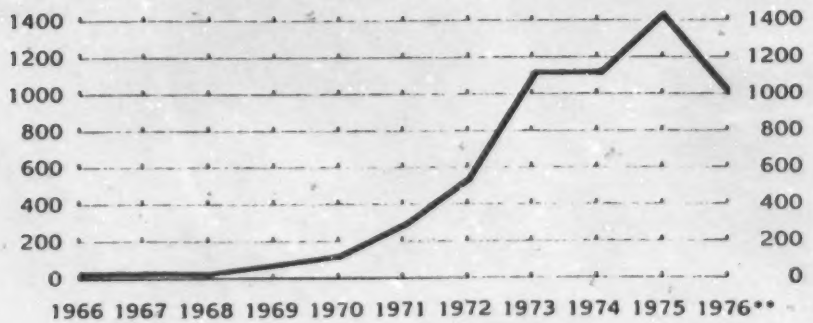
The use of futures markets for price protection involves a relatively small percentage of farmers; however, the number using it and the total volume has increased very rapidly in recent years. The following charts show the volume in three livestock contracts on the Mercantile Exchange.

Live Cattle Futures
(Thousands of Contracts Traded)

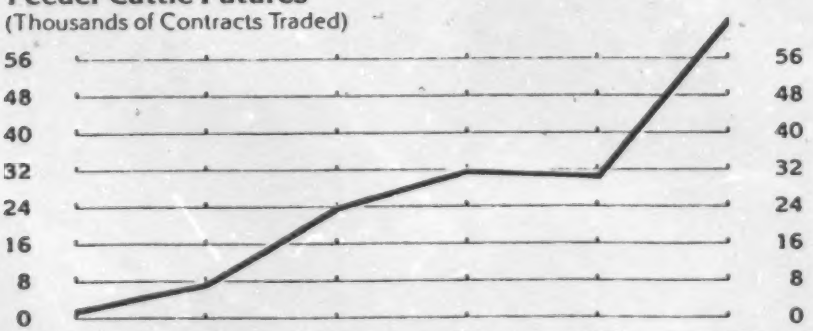


*Size of contract increased by 60%.

Live Hog Futures
(Thousands of Contracts Traded)



Feeder Cattle Futures
(Thousands of Contracts Traded)



**Projected

Much of this increase has been due to increased hedging activity by farmers and other producers.

Hedging Vs. Speculating

Hedging is a means of protecting the profit by locking in a price. Farmers that use the futures market to gain price protection for livestock operate as "hedgers." The other person operating in a futures market is called a "speculator." *A speculator* does not own or produce livestock, but *buys and sells contracts in the hope of making a profit on price changes.* Speculating in the futures market is a risk business with a potential for large profits and/or large losses. (Farmers that operate without price protection could also be considered speculators, but not in the futures market.)

The development of futures markets for cattle and hogs has given the producer a new marketing tool.

Hedging Livestock Transaction

A farmer that decides to gain price protection through the futures market will need to work through a broker. Commodity brokers are located in most of the cities in Missouri with 30,000 population or more and are listed in phone books usually under "Commodity Brokers." Many farmers work with a broker in a more distant location completing their transactions by phone and/or mail.

Contracts vary by exchanges and by livestock. Refer to the following page for specifications on some of the livestock contracts.

As an example, in hogs a contract on the Mercantile is for 30,000#. This is about 136 hogs weighing 220#. To be safe, a farmer should probably have 150-175 hogs to be ready in the contract month to be fairly sure of having the correct pounds for sale at the right time. A farmer could hedge on the Mid-America Exchange in smaller quantities. He/she could also hedge one contract with fewer hogs than indicated, but then he/she is speculating and is exposed to price risk.

When a producer has decided on a local price objective, such as $44.00/cwt. for July hogs, he/she would add the basis to it (basis is the difference between futures price and the price that is received where hogs are normally marketed). Basis is about $1.75-$2.00/cwt. for central Missouri local markets. This would give a price objective of $45.75-46.00 on the futures. The producer would place an order with her/his broker to sell a contract(s) at $46.00. She/he would put up a margin deposit of

	Commodities	Contract Size	Delivery Month	Last Day Trading	Trading Hours	Price Fluctuations Min. - Max.	
a.	Chicago Mercantile Exchange						
	Live Cattle	40,000#	Feb, Apr, June, Aug, Sep, Dec	20th	9:05 - 12:45	2 1/2¢/100	1.50/100
	Feeder Cattle	42,000#	Mar, Apr, May Aug, Sep, Oct, Nov	20th	9:05 - 12:45	2 1/2¢/100	1.50/100
	Live Hogs	30,000#	Feb, Apr, June July, Aug, Oct, Dec.	20th	9:05 - 12:45	2 1/2¢/100	1.50/100
b.	Mid-America Exchange						
	Live Hogs	15,000#	Feb, Apr, June, July, Aug, Oct, Dec		9:15 - 1:05	2 1/2¢/100	1.50/100

about $700 (varies by brokers and by price levels). When the futures price reaches $46.00, the broker will complete the transaction on the market and notify the farmer. At this point, he/she has agreed to deliver 30,000# hogs meeting contract specifications in July for $46.00/cwt. to Peoria, Illinois (or other locations at a discount). In actual practice, the producer will probably not deliver the hogs, but buy back the contract at the same time he/she sells hogs on his/her local cash market. From now until July, the farmer will not be concerned about the hog market in July. If it goes up or down, the producer will receive the $44.00 which was the price objective. When July arrives, he/she will sell his/her hogs locally and buy back the futures contract.

Market Up- Down

If hogs have dropped to $40.00 on the local market in July, the farmer will receive $4.00 less for her/his cash hogs, but since cash and futures come together in the delivery month, the futures will now be at $42.00. So, since the contract is bought back for $4.00 less than for what it was sold, this $4.00 profit makes up for the $4.00 lower price received for cash hogs and the farmer nets his/her original price goal of $44.00.

If hogs go up, the opposite takes place. More is received for cash hogs, but the futures price will be up and he/she will have a loss on it. The farmer will still receive the original price of $44.00.

Margin Money

In the above paragraph reference was made to margin. *This is "good-faith" money that guarantees you will live up to your part of the contract.* In the above example, you put up $700 margin money at the start of the contract. You will be required to maintain a margin of about $700 so if futures go up $1.00, you will be required to send the broker another $300 ($1.00/cwt. x 30,000# = $300). On the other hand, if futures go down, the broker will credit your account with $300 or send it to you. All margin money is returned when you buy back your contract so your "cost" of margin is the interest you pay on it. It is also necessary that arrangements be made with your creditor to advance margin money as needed. In a true hedging situation, securing this credit is normally not a problem.

Basis

Your basis is the difference between futures price and your local cash market price. Refer to the Instructor's Guide to observe how basis will differ and how it narrows as the contract month approaches. Delivery points other than Peoria are available at Omaha, East St. Louis, Sioux City, and St. Paul at 25¢/cwt. under and at Kansas City and St. Joseph at 50¢/cwt. under. In a practical application, the farmer will want to watch basis closely when he/she is ready to market his/her cash hogs and buy back his/her futures contract. In recent years, the cash market may fluctuate $.75-$1.50/cwt. in one day. If hogs drop $1.50 cwt. at his/her local market the day he/she sells and futures are down $.25, basis has widened $1.25 and he/she may net $1.25 less than planned. It is still sound though to buy futures the day cash hogs are sold. Usually when the basis is narrower than normal this is the day to sell cash and close out the futures contract.

Setting Your Price Objective

One of the most difficult decisions in any forward pricing activity is deciding at what price to place the hedge or the contract. Most farmers think as speculators rather than hedgers and often delay making a decision in hope of higher prices. To be a successful hedger, this attitude needs to be overcome.

Three methods are often used to determine the price objective:

a. *Profitability* - a farmer would determine the cost of production and add the desired profit. The price objective would be the price that would achieve this profit level. As an example, a farmer purchased feeder pigs and after adding the cost of feed and other costs determined that a selling price of $37.00/cwt. would be necessary to cover these costs. If a $15/head profit was the goal, $6.50/cwt. ($15.00 ÷ 230# = $6.50) would be added to the $37.00. A hedge would be placed at $43.50. Obviously, if futures were higher than $43.50, the farmer would hedge at the higher price and might decide to finish more pigs than originally planned. If futures are below $43.50, the farmer has two choices: (1) don't buy feeder pigs and stay out of business until a profit is possible or (2) buy pigs and remain unhedged until futures go to $43.50 which is a speculative position and has risk associated with it. A farmer will also want to consider the next two methods of determining price objectives in connection with this method.

b. *Fundamentals* - This method considers the principle of Supply-Demand as discussed in Less 6 of Profit Maximizing Principles. The following chart gives the expected price movement, assuming a constant demand and supply of other meats (which really never occurs), if the expected supply changes. Supply estimates are available from Pig Crop Reports, Cattle on Feed Reports, etc., issued by USDA.

Percentage Change in Price Resulting From Each One Percent Change in Supply - In the Opposite Direction*

Hogs	1.6 - 2.0
Beef Cattle	1.2

*assuming a constant demand and supply of competing meats - which rarely occurs.

As an example, if the Pig Crop Report shows 10% more pigs in the 60# and under weight, then the price would be expected to go down 16%-20% (1.6 x 10% = 16%; 2.0 x 10% = 20%) compared to last year at the time those pigs go to market if demand is expected to remain about steady and the supply of other competing meats is about the same. As an example, it will probably take about 115-164 days for pigs 60# and under to reach market weight ((230-60) ÷ 1.5 = 115, (230 - 0) ÷ 1.4 = 164). If this report is March 1, then these pigs would be expected to go to market June 15 - August 15. If the market last year was $50/cwt. during July, this method would point to a market price of $40-$42/cwt. this year.

A much more accurate method of determining the price is to use the procedure followed by market analysts on the UMC College of Agriculture staff. Dr. Glenn Grimes, UMC Livestock Marketing Specialist, uses the following formula:

$$y = .7420 - .728x_1 - .3125x_2 - .3254x_3 + .01315x_4$$

y = price of barrows and gilts at 7 major markets
x_1 = per capita pork consumption
x_2 = per capita broiler consumption
x_3 = per capita beef consumption
x_4 = per capita disposable personal income

This method considers the supply of other meat as well as the expected demand. Dr. Grimes prepares a summary of the outlook information following each USDA report. It would be more accurate and easier for most farmer to obtain a copy of this summary either by writing Dr. Grimes, Department of Agricultural Economics, 200 Mumford Hall, UMC, Columbia, Missouri, or by contacting vocational agriculture departments or extension centers. This method will place the expected price in a range for example of $42-$45 for the third quarter.

c. *Charting* - Most brokerage houses will use a system called "charting" to establish a more definite price at which to hedge. There are many methods of charting used and none are correct 100% of the time. However, they can be used with the other two methods to establish a definite price at which to place a hedge. One method is to place the hedge when the three-day average price is above the ten-day average price. A handout in the Instructor's Guide shows future prices for July hogs for one period.

Who Should Use Price Protection?

A farmer that hedges or forward contracts every group of hogs or cattle will probably receive a lower price on an average than if there was no price protection. The principle is to do selective pricing based on the three methods above. Also, a farmer on a continuous marketing program - selling hogs every two weeks as an example - may average higher prices than if hedged or contracted.

A person that can not stand price risk is the one that can use this to an advantage. A young farmer with large debts and high payments would probably want enough price protection to at least cover his/her principal and interest payments. Others that could consider this would include: (a) those uncomfortable with risks, (b) those in an expansion period of an enterprise, (c) those that expect the market to decline due to the phase of the hog or cattle cycle and (d) those more interested in a steady-level income without the wide swings in prices common in recent years.

MARKETING - PRICING MILK

Introduction

The marketing and pricing of milk is probably the least understood of any agricultural commodity - this is true of both producers and consumers. As a result much confusion and distrust has developed in milk marketing. It is to the benefit of the producers to understand the system so they can have an influence through their cooperatives and Federal Milk Marketing Orders on prices and other regulations. It also enables producers to make more informed decisions regarding their future plans. Producers need to keep consumers informed regarding price changes and the need for these changes to ensure an adequate supply of milk at reasonably stable prices.

Brief History of Milk Marketing

At one time, dairy farmers delivered milk to homes in nearby towns. The matter of price was settled through simple agreements between farmers and their customers. But as marketing methods developed, farmers became separated from consumers by distributors and wholesalers who set prices for both farmers and consumers.

Farmers observed that prices became unstable chiefly because of reserve supplies. Yet they also observed that reserve supplies were necessary to any well-supplied market (so milk was always available for the consumer). Milk cannot be stored; production varies widely depending on the season of the year; and consumption remains relatively constant throughout the year.

This reserve supply forced the price down which eventually cut production. Then, price went unusually high. Remember, the demand for milk is inelastic. This means consumers will not increase consumption very much even if price is reduced drastically - nor, do they reduce consumption if price goes up. Also, farmers cannot change production rapidly in response to price changes. (The most rapid methods of increasing production are to increase quantity of feed fed and to cull fewer cows. These have a minimal effect on production though. And, it takes at least two years to grow a heifer calf to maturity and place her in the milking herd. Obviously, production can be cut rapidly by selling dairy cows for slaughter as well as keeping fewer heifers and reducing the amount of grain fed.) Under this situation of price instability, farmers found themselves powerless to prevent harmful and unreasonable price manipulation. Consumers pay the final cost of disruption in the form of higher prices when farm milk supplies decline.

Public Health Regulations

Another factor is important in the marketing of milk - the need to protect public health. Only 50 or 60 years ago, unbelievable conditions existed. Filth and adulteration were the order of the day. Milk was dipped from cans into pitchers and jars on the dusty street. One distributor in those days said, "It was a race between the neighborhood cats and the housewife to see which got the milk." Adulteration was usual. Often, so much water was added to milk that solids as chalk or molasses had to be added to restore color and body. The water pump was often called "the cow with the iron tail".

Fortunately, this has been corrected. Now, milk and milk products are safe, nutritional, and wholesome foods with the confidence of the consumer restored. This sanitary inspection is conducted by public health departments representing various agencies as city and/or state governments. The standards in these inspections influence the number of producers qualified to supply a certain market.

Kinds of Milk Markets

The marketing of milk today is divided into two categories: (1) *manufacturing,* and (2) *fluid* (often called Grade A). In the United States, slightly over half of the milk marketed is used for the production of manufactured dairy products.

Manufacturing milk is used for *"hard"* and *"soft"* dairy products. Hard products are those easily stored for extended periods of time. Examples are cheese, other than cottage cheese; butter; dried, evaporated, and condensed milk or products. Other examples include soft cheese, yogurt, ice cream, custards, puddings, and formulas for infant feeding. Some farmers refer to manufacturing milk as "Grade C" milk.

Fluid milk is milk which is produced under sanitary inspection for sale in the fluid form. Health regulations for each market may vary some and also determine the uses of milk which requires the inspection. As an example, in some markets, milk used for fluid cream and cultured cream is required to be from "Grade A" milk. (Fluid milk is often called "Grade A" since the sanitary inspection is required.)

Fluid milk is marketed in three classes based on the use of the milk: *Class I, II,* and *III.* The first priority of fluid milk is for Class I, which is used for bottling milk. After the demand for bottling milk is filled, the balance will go to Class II, which is used for soft manufactured products such as eggnog, cottage cheese, etc. After the demand for

Class II is filled, the balance goes into Class III to be used for hard manufacturing products such as cheese, butter, etc. Fluid milk used for Class II and III products is being used the same as manufacturing milk discussed earlier.

Effect of Classes of Milk

These three classes of fluid milk provide a method of always *having ample supplies* of bottling milk for the consumer. However, there will *never be a surplus* since any in excess of this need (on a daily basis), will be diverted to Class II or III. Products manufactured from Class III can be stored indefinitely and would not have a price depressing effect on today's fluid market.

As an example, in April 1977, 45% of the fluid milk in the Kansas City Marketing Area went as Class I. The balance really served as a reserve. But, since it wasn't needed, it went into manufactured milk products.

How is Price Determined?

The pricing procedure will be discussed in two parts: manufacturing and fluid.

Manufacturing Milk Price - The price paid for manufacturing milk is based on *supply and demand.* Demand for manufacturing milk products (cheese, butter, dried products, etc.) is influenced by the size of the population, income, tastes and preferences for individual dairy products, and prices of competing products. Supply of manufacturing milk is determined by the number of dairy cows, production per cow, efficiency of plants, and amount of manufacturing milk being diverted from fluid milk production.

What a local processing plant can pay for manufacturing milk is determined by: (1) price of their product, e.g. cheese, (2) yield obtained, e.g. pounds of cheese per 100 lb. of milk, and (3) cost of handling and manufacturing. Since all three of these factors are constantly changing, the price paid for manufacturing milk will change frequently. Plants may exceed their paying ability in the face of stiff competition for a short period of time in order to hold their milk supply. However, a plant cannot do this very long or they will operate at a loss and go out of business.

M-W Price Series

Since over half the manufacturing milk in the United States is produced in Minnesota and Wisconsin, the price paid for manufacturing milk in these two states influences the price in Missouri. *A monthly average of prices paid in Minnesota and Wisconsin* is computed and is referred to as the M-W Price Series. The M-W Price Series is currently accepted as the indicator of the value of manufacturing milk since it more nearly reflects the Supply:Demand picture for milk products in the U. S. The price of manufacturing milk in Missouri is usually higher than the M-W price due to higher cost of production. It is limited to not exceeding the M-W price by more than transportation cost though, or milk products would be transported from Minnesota-Wisconsin to Missouri.

Marketing Orders and Pricing

Fluid milk price is determined through Federal Milk Marketing Orders and the M-W price referred to above. Milk Marketing Orders are established by vote of the producers in an area through U.S.D.A. held referendums. Basically, the marketing order requires all milk handlers to pay a price for the milk based on its use and the M-W price.

In 1977, there were three marketing orders in Missouri: Kansas City, Neosho Valley, and St. Louis-Ozark. Fluid milk in each of these orders is sold in three classes based on use: Class I, II, and III as outlined in a paragraph above. These marketing orders stipulate the amount Class I or Class II will be paid above the M-W Price. As an example, in 1977, Class I differential for Kansas City was $1.74, Neosho Valley was $1.54, and St. Louis-Ozark $1.60. All three had Class III at $.10 over the M-W price. To extend the example, the M-W price (or Class III) in February, 1977, was $8.60/cwt., Class II was $8.70/cwt., and Class I was $10.34/cwt. (for April - 60 days later in Kansas City). (This two months delay is to give handlers advance notice of Class I prices in order to bid contracts.) Each day, as milk is delivered to plants, farmers are paid (in this price example) $10.34/cwt. for their share of the milk going for Class I usage, $8.70/cwt. for their share going for Class II usage, and $8.60/cwt. for their share going for Class III usage.

Blend Price

To avoid unfairness to farmers and processors, the total milk in a Market Order Area is figured and all farmers receive the same price based on the total milk in the area going to each class. This average price is called the "Uniform Price" or "Blend Price".

An example for the Kansas City Milk Order is below:

	Milk (cwt.)	Price Per cwt.	Value of Milk
Class I	420,320	10.34	$4,348,108
Class II	126,439	8.70	1,100,019
Class III	376,907	8.60	3,241,400
	923,666		$8,689,527

$8,689,527 ÷ 923,666 cwt. = $9.41/cwt. uniform or blend price. A farmer selling fluid milk in the Kansas City Market Order in the above situation would receive $9.41/cwt. for 3.5% milk.

Differentials

If the butterfat differential was $.10, the farmer would receive $9.51/cwt. for 3.6% milk or $9.91/cwt. for 4% milk.

There are two other differentials applied to fluid milk. One is called a location adjustment. As an example, a plant located 70 miles outside of the Kansas City Marketing Area would pay $.10/cwt. less. The other is a seasonal adjustment. As an example, St. Louis deducts 15¢/cwt. in March and July and 25¢ in April, May, and June. This is added back to checks with 20% of the fund being added in each of September and December and 30% in each of October and November. This encourages farmers to "even" out their seasonal production.

Differentials for location, season, butterfat, and usage are found in bulletin "Summary of Major Provisions in Federal Milk Marketing Orders", available form AMS, U.S.D.A.

Effect of Supply:Demand

The question is often asked, "What causes fluid milk prices to respond to Supply:Demand with Federal Orders?" Since the fluid milk price is tied to the M-W price, when the supply of cheese becomes short and prices paid by M-W plants increase, this automatically raises the Class I and II price. The increase in Class I price causes a decrease in bottle milk sales which puts more milk into Class III or in direct competition with M-W milk. This would tend to lower the Class I price and the blend price again. This action reduces widely fluctuating prices. However, if the demand for cheese stays high at the increased price and supply, production will eventually increase to meet the demand. Higher Class I utilization will cause a higher blend price. (Even if production stays the same and class prices stay the same, the blend price will increase.)

Deciding On a Market

One question facing producers is, "Should I produce for the fluid (Grade A) market or the manufacturing market?" The price of fluid milk will probably average about $1.50 per hundred over manufacturing milk (1978). It varies by the amount going into each class though and may drop to $1.00 per hundred premium. A producer would probably expect to gross about $195 more per cow per year (based on 13,000# production @ $1.50 per cwt.) from fluid milk sales compared to manufacturing milk. This is about $10,000 per year on a 50 cow herd.

Costs that are higher for the fluid market include those associated with the stricter sanitation measures and the extra equipment and buildings needed for a usually larger enterprise. Estimated costs for buildings and equipment are in the Instructor's Guide.

Two additional factors that will influence the decision are: (1) size of the herd and (2) number of years planned to stay in business. Obviously, the larger the herd plus the longer length of time in business results in greater profits realized in the fluid market. A partial budget form is in the Instructor's Guide which could be used to determine added returns and added costs. This, combined with figures from cost estimates, should enable a producer to make a more informed decision.

Credit: Adapted from the following:

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